

Digital Video Disc Recorder Owner's Manual

DVDR985



Important!
Return your
Warranty
Registration Card
within 10 days.
See why inside.



Read this manual first!

Congratulations on purchasing this Philips product.
We've included everything you need to get started.
If you have any problems, Philips Representatives can
help you get the most from your new product by explaining:

- Hookups,
- First Time Setup, and
- Feature Operation.

Do not attempt to return this product to the store.

For fast help, call us first!
1-800-531-0039

Thank you for making Philips a part of your home!

Let's make things better.



PHILIPS

Return your Warranty Registration card today to ensure you receive all the benefits you're entitled to.

Once your PHILIPS purchase is registered, you're eligible to receive all the privileges of owning a PHILIPS product. So complete and return the Warranty Registration Card enclosed with your purchase at once. And take advantage of these important benefits.

Warranty Verification

Registering your product within 10 days confirms your right to maximum protection under the terms and conditions of your PHILIPS warranty.

Owner Confirmation

Your completed Warranty Registration Card serves as verification of ownership in the event of product theft or loss.

Model Registration

Returning your Warranty Registration Card right away guarantees you'll receive all the information and special offers which you qualify for as the owner of your model.

PHILIPS

Congratulations on your purchase, and welcome to the "family!"

Dear PHILIPS product owner:

Thank you for your confidence in PHILIPS. You've selected one of the best-built, best-backed products available today. We'll do everything in our power to keep you happy with your purchase for many years to come.

As a member of the PHILIPS "family," you're entitled to protection by one of the most comprehensive warranties and outstanding service networks in the industry. What's more, your purchase guarantees you'll receive all the information and special offers for which you qualify, plus easy access to accessories from our convenient home shopping network.

Most importantly, you can count on our uncompromising commitment to your total satisfaction. All of this is our way of saying welcome - and thanks for investing in a PHILIPS product.

Sincerely,




Lawrence J. Blanford
President and Chief Executive Officer


P.S. Remember, to get the most from your PHILIPS product, you must return your Warranty Registration Card within 10 days. So please mail it to us right now!



Know these safety symbols



 This "bolt of lightning" indicates uninsulated material within your unit may cause an electrical shock. For the safety of everyone in your household, please do not remove product covering.

 The "exclamation point" calls attention to features for which you should read the enclosed literature closely to prevent operating and maintenance problems.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION: To prevent electric shock, match wide blade of plug to wide slot, fully insert.

ATTENTION: Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu'au fond.

For Customer Use

Enter below the Serial No. which is located on the rear of the cabinet. Retain this information for future reference.

Model No. _____
Serial No. _____

**PHILIPS**

Visit our World Wide Web Site at <http://www.philips.com>

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4 Safety Information

Safety Precautions

Warning: To prevent fire or shock hazard, do not expose this equipment to rain or moisture.

Federal Communications Commission (FCC) Warning: Any unauthorized changes or modifications to this equipment void the user's authority to operate it.

Laser Safety

This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.

CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. The set complies with the FCC-Rules, Part 15 and with 21 CFR 1040.10.

CAUTION: Visible and invisible laser radiation when open and interlock defeated. Do not stare into the beam. The beam is located inside, near the deck mechanism.

Special Information for Canadian Users

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

CET APPAREIL NUMÉRIQUE N'ÉMET PAS DE BRUITS RADIOÉLECTRIQUES DÉPASSANT LES LIMITES APPLICABLES DANS LA RÈGLEMENT SUR LE BROUILLAGE RADIOÉLECTRIQUES ÉDICTÉ PAR LE MINISTÈRE DES COMMUNICATIONS DU CANADA.

Radio/TV Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, try to correct the interference by one or more of the following measures:

- 1) Reorient or relocate the receiving antenna.
- 2) Increase the separation between the equipment and the receiver.
- 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 4) Consult the dealer or an experienced radio/TV technician for help.

WARNING:

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference.
- 2) This device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT:

This product was FCC verified under test conditions that included use of shielded cables and connectors between system components. Use shielded cables to reduce the possibility of causing interference to radios, televisions, and other electronic devices. If you have any problems, contact your supplier.

Copyright Protection

Unauthorized copying, broadcasting, public performance, and lending of Discs are prohibited. This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.


Note to Cable TV Installer

This reminder is provided to call the Cable TV system installer's attention to Section 820-40 of the National Electrical Code (NEC), which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

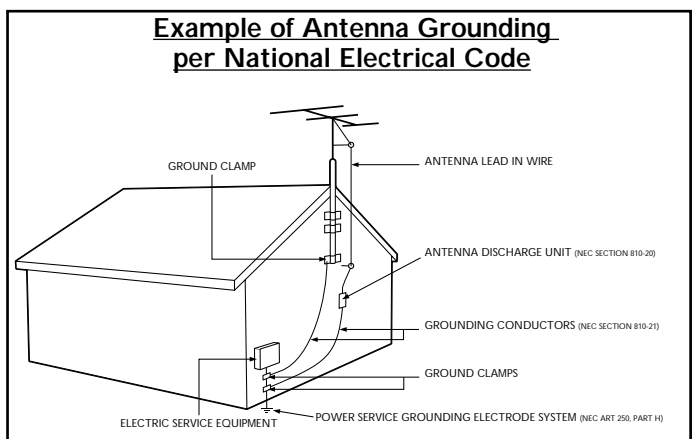
Declaration of Conformity

Model Number: DVDR985
Trade Name: Philips
Responsible Party: Philips Consumer Electronics
P.O. Box 14810, Knoxville, TN 37914-1810
(865) 521-4316

IMPORTANT SAFETY INSTRUCTIONS

1. Read instructions. Read all the safety and operating instructions before operating the product.
2. Retain instructions. Keep the safety and operating instructions for future reference.
3. Heed warnings. Adhere to all warnings on the product and in the operating instructions.
4. Follow instructions. Follow all operating and use instructions.
5. Cleaning – Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. Attachments – Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. Water and Moisture – Do not use this product near water - for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, etc.
8. Accessories – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product. Any mounting of the product should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.
9. Move a product and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
10. Ventilation – Slots and openings in the cabinet provide ventilation, ensure reliable operation of the product, and protect it from overheating. Do not block or cover these openings. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. Do not place this product in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. Power Sources – This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12. Grounding or Polarization – This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
13. Power-Cord Protection – Route power supply cords so they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
14. Outdoor Antenna Grounding – If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See figure at right.
15. Lightning – For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

16. Power Lines – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, take extreme care to keep it from touching such power lines or circuits; contact with them might be fatal.
17. Overloading – Do not overload wall outlets, extension cords, or integral convenience receptacles. This can result in a risk of fire or electric shock.
18. Object and Liquid Entry – Never push objects of any kind into this product through openings; they may touch dangerous voltage points or short out parts, resulting in a fire or electric shock. Never spill liquid of any kind on the product.
19. Servicing – Do not attempt to service this product yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20. Damage Requiring Service – Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a) When the power supply cord or plug is damaged,
 - b) If liquid has spilled or objects have fallen into the product,
 - c) If the product has been exposed to rain or water,
 - d) If the product does not operate normally by following the operating instructions. Adjust only those controls covered by the operating instructions. An improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation,
 - e) If the product has been dropped or damaged in any way,
 - f) When the product exhibits a distinct change in performance. This indicates a need for service.
21. Replacement Parts – When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or having the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
22. Safety Check – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23. Wall or Ceiling Mounting – Mount the product to a wall or ceiling only as recommended by the manufacturer.
24. Heat – Situate this product away from heat sources, such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.
25. Battery usage **CAUTION** - To prevent battery leakage that may result in bodily injury or damage to the unit:
 - Install all batteries correctly, with + and - aligned as marked on the unit.
 - Do not mix batteries (old/new, carbon/alkaline, etc.).
 - Remove batteries when the unit is not used for a long time.



6 Introduction

Welcome!

Your Philips DVD Recorder both records DVD+RWs/DVD+Rs and plays prerecorded DVDs. You can record TV programs, edit camcorder recordings, and quickly access your recordings in the Index Picture Screen. Plus, the recordings you make on the Recorder will play on some DVD Players and DVD-ROM drives. You'll soon appreciate the digital picture and sound quality of DVD, DVD+RW, and DVD+R, which will exceed the quality you have had with video cassette tapes.

Read this manual carefully to understand the latest features, then enjoy your new DVD Recorder.

Features

- Digital Theater System
- Dolby Digital Surround Sound
- DVD-Video Compatibility
- Fast Forward/Reverse Search
- i.LINK Digital Video (DV) connection
- Index Picture Screen
- NTSC/PAL compatibility
- Paused/Fast/Slow/Step-by-Step/Zoomed Playback
- Progressive Scan compatibility
- Repeat and Repeat A-B playback
- Time Search
- TruSurround by SRS
- VCR Plus+ Programming

Package Contents

- DVD Recorder
- Remote control with two AA batteries
- AC power cord
- One blank Philips DVD+RW
- One RF coaxial cable (black with silver tip, with single prong in center of tip)
- One S-Video cable (black with silver tip)
- One three-strand Component Video Cable (ends have blue, green, and red stripes)
- Two two-strand audio cables (ends have red and white stripes)
- One composite video cable (end has a yellow stripe)
- This owner's manual and registration materials

Environmental Information

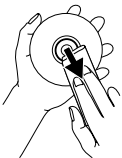
Your system has materials that can be recycled and reused if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packaging materials, exhausted batteries, and old equipment.

Safety Information

- Do not expose the system to excessive moisture, rain, sand, or heat sources.
- Place the DVD Recorder on a firm, flat surface.
- Keep the DVD Recorder away from domestic heating equipment and direct sunlight.
- When placing the DVD Recorder in a cabinet, allow about one inch of space all around the DVD Recorder for ventilation.

Cleaning Discs

- When a Disc becomes dirty, clean it with a cleaning cloth. Wipe the Disc from the center out, in a straight line.



- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for analog discs.
- Always keep the tray closed to avoid dust on the lens.
- The lens may cloud over if you suddenly move the DVD Recorder from cold to warm surroundings. Playing a Disc is not possible then. Leave the power on for about one hour with no Disc in the Recorder until normal playback is possible.

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VCR Plus+ and PlusCode are registered trademarks of the Gemstar Development Corporation. The VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

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This DVD Recorder will play various types of Discs. Some Disc types will only play on the Recorder; others will record in the Recorder; some will record and play. There are also a few types of Discs that will neither play nor record on this Recorder. Look for these logos on your Discs to determine whether the Disc will or will not play or record on the Philips DVD Recorder.

Discs for Recording and Playing



DVD+RW (Digital Video Disc + Rewritable): These Discs can be recorded on repeatedly. Recordings can be erased, then you can record again on the same Disc.



DVD+R (Digital Video Disc + Recordable): These Discs can be recorded only once. After you finalize a DVD+R, you cannot record on it any more.

Discs Unsuitable for Recording or Playing



DVD-RAM



DVD-Audio

Discs for Playing Only



DVD (Digital Video Disc)



Video CD
Similar to DVDs, these Discs hold less material. For example, a two-hour movie will fit on one DVD, but may take two VCDs.



DVD-R (DVD-Recordable)
You cannot record on these Discs using the Philips DVD Recorder.



Super Video CD



DVD-RW (DVD-Rewritable)
You cannot record on these Discs using the Philips DVD Recorder. These Discs play only if recorded in video mode and if finalized.



CD-R (CD-Recordable)
(plays only Audio CD contents)



Audio CD
(Compact Disc Digital Audio)



CD-RW (CD-Rewritable)
(plays only Audio CD contents)



Super Audio CD
(plays only the CD layer, if present)

Region Codes and Color Systems

DVDs must meet the requirements for Region Codes and Color Systems before you can use them with the DVD Recorder. DVDs must be labelled for ALL regions or for Region 1 in order to play on this DVD Recorder. You cannot play Discs that are labeled for other regions. These symbols must appear on your DVDs, or you cannot play the DVD in this DVD Recorder.

The number inside the globe refers to a region of the world. Region 1 represents the United States, Canada, upper regions of North America, Bermuda, the U.S. Virgin Islands, and small regions near Australia.



Furthermore, recordings are made according to different color systems throughout the world. The most common color systems are NTSC, which is used primarily in the United States and North America, PAL, and SECAM.

This DVD Recorder is compatible with NTSC and PAL. Make sure the Discs you play were recorded in NTSC or PAL. The color system of the DVD may appear on the DVD or on the Disc case.

However, when playing a PAL Disc, the Recorder must be connected to a PAL-compatible TV using either the S-VIDEO OUT (Y/C) (EXT 1), Component Video Out (Y Pb Pr) (EXT3), or PROG SCAN OUT (Y Pb Pr) jacks of the Recorder. The Recorder's VIDEO OUT (CVBS) (EXT2) jack does not send a clear PAL signal. If a PAL Disc is copy-protected, the video signal (or picture) may not be correct if you are using the PROG SCAN OUT (Y Pb Pr) jacks on the Recorder.

8 General Information

Battery Installation

- 1 Remove the battery compartment lid** on the rear of the remote control by sliding the lid down, then off.
- 2 Place two AA batteries inside the battery compartment with their + and – ends aligned as indicated.** Do not mix old and new batteries or different types of batteries (standard, alkaline, etc.).
- 3 Replace the battery compartment lid.** Slide the lid until you hear it click into place.

Using the Remote Control

Unless stated otherwise, the remote control can operate all the features of the DVD Recorder. Always point the remote control directly at the remote sensor on the front of the DVD Recorder, not the TV. *Details are on page 22.* Make sure there are no barriers between the remote control and the DVD Recorder.

The remote control also will operate some features of some TVs. *Details are on pages 60-61.*

When referring to this manual, remember...

DVD	The feature is available on some Digital Video Discs.
AUDIO CD	The feature is available on some Audio Compact Discs.
VIDEO CD	The feature is available on some Video Compact Discs.
DVD+RW	The feature is available on some DVD+ReWritable Discs.
DVD+R	The feature is available on some DVD+Recordable Discs.

DVD Disc Menus...

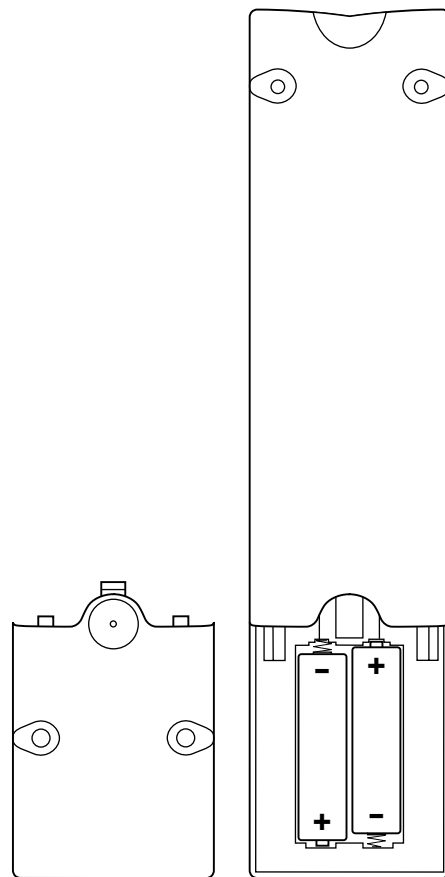
Some explanations in this manual describe the DVD Disc Menus, which vary among DVDs. Movie producers set these menus, and not all DVDs have menus. But, if the DVD has a menu, access the Disc Menu by pressing the DISC MENU button on the remote control. *Details are on page 28.*

DVD Recorder Menus...

Some instructions explain how to use the DVD Recorder's menu (or the System Menu or Menu Bars) to set up features of the DVD Recorder or the Disc. You get to the DVD Recorder Menu by pressing SYSTEM MENU on the remote control. *Details are on page 25.* Even if a feature is set up in the DVD Recorder's menu, it will not be available if the current Disc does not include that feature.

Available Disc Features...

Features in this manual may not be available on every Disc. If the feature is not available, you cannot use the DVD Recorder to make the feature available. An "X" will appear in the top left corner of the TV screen if you try to access a feature that is not available on the current Disc.



Determining the best possible connection...

The capabilities of your existing equipment, especially your TV, will determine your connection possibilities. However, the following guidelines describe which options provide the best picture and sound quality.

- ★★★★ Component Video provides the best picture quality. Progressive Scan Component Video has the highest quality, but use it only if the TV has Progressive Scan. *Details are on page 10.*
- ★★★ S-Video provides excellent picture quality. *Details are on page 11.*
- ★★ Composite Video (a yellow Video jack) provides good picture quality. *Details are on page 12.*
- ★★ **Your TV may have only an RF-style jack, usually labeled Antenna In or 75 ohm. You will need an RF Modulator in order to view the DVD Recorder at your TV.** Refer to the details below and to the instructions provided with the RF Modulator. The RF Modulator and necessary cables are not supplied with the DVD Recorder.
- ★★★★ Digital audio connections provide the clearest sound. Connect one of the DVD Recorder's DIGITAL AUDIO OUT jacks (COAX (coaxial) or OPTICAL) to your Stereo for the best sound quality. *Details are on page 14.*
- ★★★ If digital audio connections are not possible, connect the DVD Recorder's red and white AUDIO OUT jacks to the Audio In jacks of your Stereo or TV. *Details are on pages 10-13.*

Before you begin...

- Refer to the manuals of your TV, Stereo, or other equipment as necessary. Note the style of jacks and connectors on the other equipment. Determine how to choose different Audio and Video In channels on your other equipment so you can see and hear the DVD Recorder on the TV, Stereo, etc.
- Disconnect all equipment from the power outlets. Connect the equipment to the power outlets only after you have finished hooking up everything. Never make or change connections with equipment connected to the power outlet.
- **If you need to connect a VCR, Cable Box, or Satellite Receiver to your Recorder, refer to the separate Quick Start Guide for details.**


Remember...

- **Set the TV to the correct Video In channel.** This is not channel 3 or 4 as it might be when using a VCR (unless you are using an RF Modulator as detailed below). Video In channels may be called AUX or AUXILIARY IN, AUDIO/VIDEO or A/V IN, EXT1 or EXT2 or External In, etc. These channels often are near TV channel 00. Or, your TV remote control may have a button or switch that lets you choose the Video In channel directly. See your TV manual for details. Or, go to your lowest TV channel and change channels down until you see the blue Philips DVD background picture on the TV screen.
- Connect the DVD Recorder directly to the TV. For example, do not connect the DVD Recorder to a VCR, then connect the VCR to a TV. This type of connection may distort the picture and sound. Also, your VCR might have the copy protection system, which could distort the DVD image.
- Set the Stereo to the correct channel or "source" mode.
- Do not connect the DVD Recorder's AUDIO OUT jacks to the PHONO IN jack of your Stereo.
- You only need one audio connection and one video connection between the DVD Recorder and your TV (or TV and Stereo). So, you might not use all the jacks on the Recorder.
- If you plan to watch your TV with the DVD Recorder off, connect the supplied RF coaxial cable to the Recorder's TV jack and to the RF IN or ANTENNA IN jack (75 ohm) on your television. This lets you watch channels at the TV normally when the DVD Recorder is off and will improve the reception at your TV.

Once you determine the option that best fits with your existing equipment, find your choice on pages 10-15. Follow the steps for the hookup you chose.

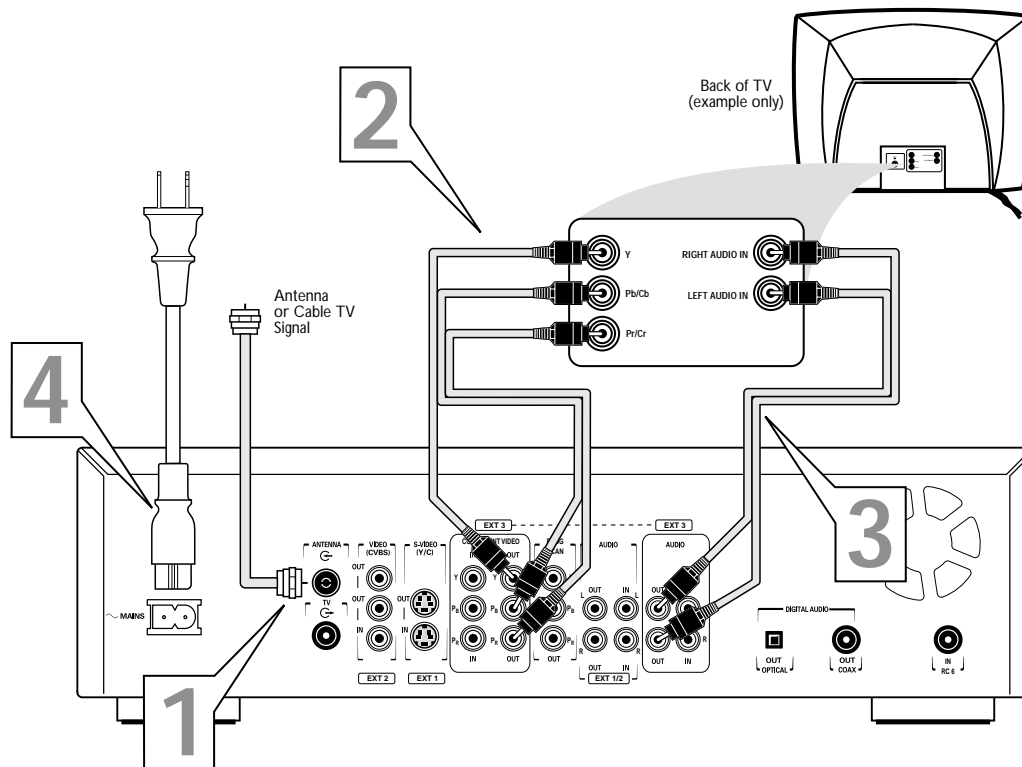
Then, when you finish your connections and turn on the DVD Recorder for the first time, complete the Initial Setup. This sets up TV channels, menu languages, and other features. Go to page 16 to do the Initial Setup.


Using an RF Modulator ...

- 1 You may have an Antenna/Cable TV signal connected to your TV's ANTENNA IN jack. Remove it from the TV and connect the Antenna/Cable TV signal to the DVD Recorder's ANTENNA jack.
- 2 Connect the supplied video cable (with yellow ends) to the DVD Recorder's yellow VIDEO OUT (CVBS) (EXT 2) jack and to the VIDEO IN jack on the RF Modulator.
- 3 Connect the supplied audio cable (with red/white ends) to the DVD Recorder's AUDIO OUT (EXT 1/2) jacks and to the AUDIO IN jacks on the RF Modulator. Match the cable colors to the jack colors.
- 4 Connect an RF coaxial cable to the RF OUT/ANTENNA OUT/TO TV jack on the RF Modulator. Connect the other end of the same RF coaxial cable to the ANTENNA IN/RF IN jack on your TV.
- 5 Your RF Modulator should have a Channel 3/4 switch. This determines the TV channel on which you will watch materials coming from the DVD Recorder. Set the RF Modulator's Channel 3/4 switch to either 3 or 4, whichever TV channel is least used in your area.
If your RF Modulator has a Modulator/Antenna switch, set it accordingly. Refer to the RF Modulator instructions.
- 6 Turn on your TV. Choose channel 3 or 4 (the same channel to which you set the RF Modulator's Channel 3/4 switch).
- 7 Connect the DVD Recorder's power cord to a power outlet. Turn on the DVD Recorder by pressing ON/OFF . You can set up TV channels as described on page 36.

10 Hookups (cont'd)

Connecting to a TV Only TV has Component Video In Jacks

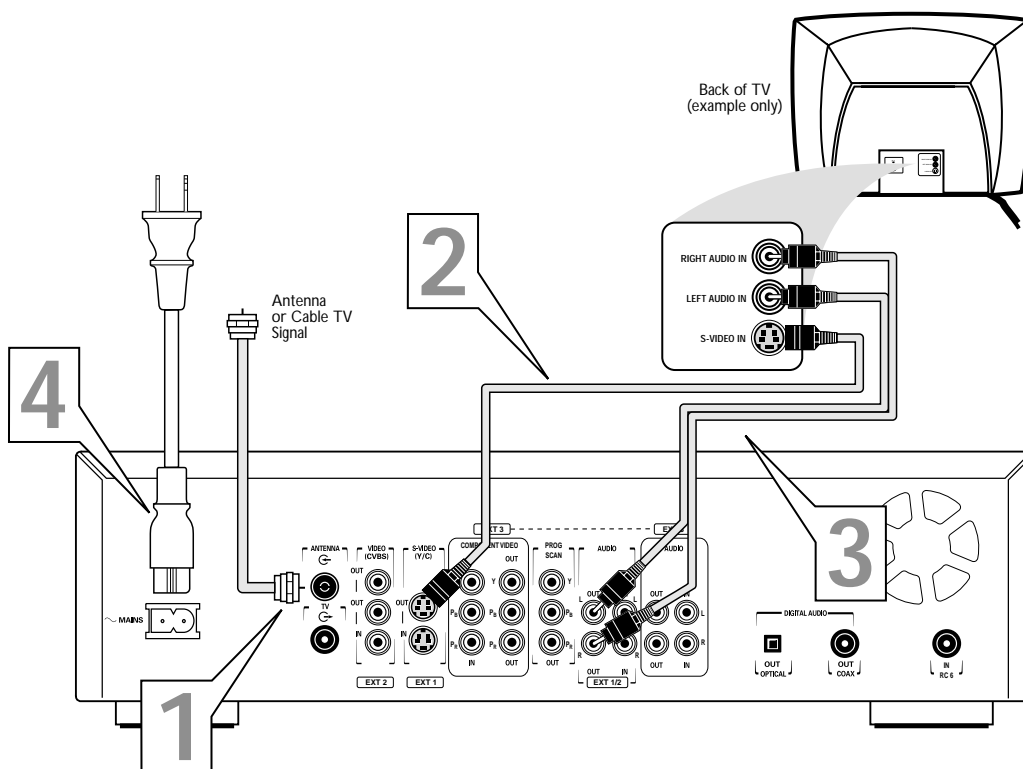


- 1** Connect your Antenna or Cable TV signal to the ANTENNA jack on the rear of the DVD Recorder.
- 2** Connect the DVD Recorder's COMPONENT VIDEO OUT Y Pb Pr jacks (EXT 3) to the corresponding COMPONENT VIDEO IN jacks on the TV. Use the supplied three-strand component video cable, which has ends with red, blue, and green stripes. Match the cable stripe colors to the jack colors.
- 3** Connect the DVD Recorder's red and white AUDIO OUT (Left and Right) (EXT 3) jacks to the left/right AUDIO IN jacks on the TV. Use one of the supplied two-strand audio cables, which has ends with red and white stripes. Match the cable stripe colors to the jack colors.
- 4** Connect the supplied power cord to the MAINS (AC Power) jack on the rear of the DVD Recorder. Connect the power cords of the DVD Recorder and the TV to a power outlet.
- 5** Press the STANDBY-ON  button on the front of the DVD Recorder to turn on the DVD Recorder. The STANDBY-ON light will turn green.
If "TURN ON TV" appears on the display panel, you need to turn on your TV and set it to the correct Component Video In channel. (See next step.) This is part of the Initial Setup of the DVD Recorder. You cannot see the Initial Setup screens until you turn on the TV and have it on the right Component Video In channel.
- 6** Turn on the TV power. Set the TV to the correct Component Video In channel. This is not channel 3 or 4 as it might be when using a VCR. See your TV owner's manual for details. Or, go to your lowest TV channel and change channels down until you see the DVD background picture or Initial Setup screen on the TV screen. The Initial Setup screen will appear the first time you turn on the Recorder. Go to page 16 to continue.

Helpful Hints

- If your TV has Progressive Scan, connect the DVD Recorder's PROG SCAN OUT Y Pb Pr jacks to the TV's Progressive Scan In jacks (instead of using the COMPONENT VIDEO OUT jacks as described in step 2). Progressive Scan produces a clearer picture by doubling the number of visible picture lines per field, providing a jitter-free, sharp, quiet picture. Only use these connections if your TV has Progressive Scan. Check your TV manual for details.
- On the TV, the Component Video In jacks may be labeled YUV or Pr/Cr Pb/Cb Y and may be green, blue, and red.
- If you plan to watch your TV with the DVD Recorder off, connect the supplied RF coaxial cable to the Recorder's TV jack and to the RF IN or ANTENNA IN jack (75 ohm) on your television. This lets you watch channels at the TV normally when the DVD Recorder is off and will improve the reception at your TV.

Connecting to a TV Only TV has an S-Video In Jack



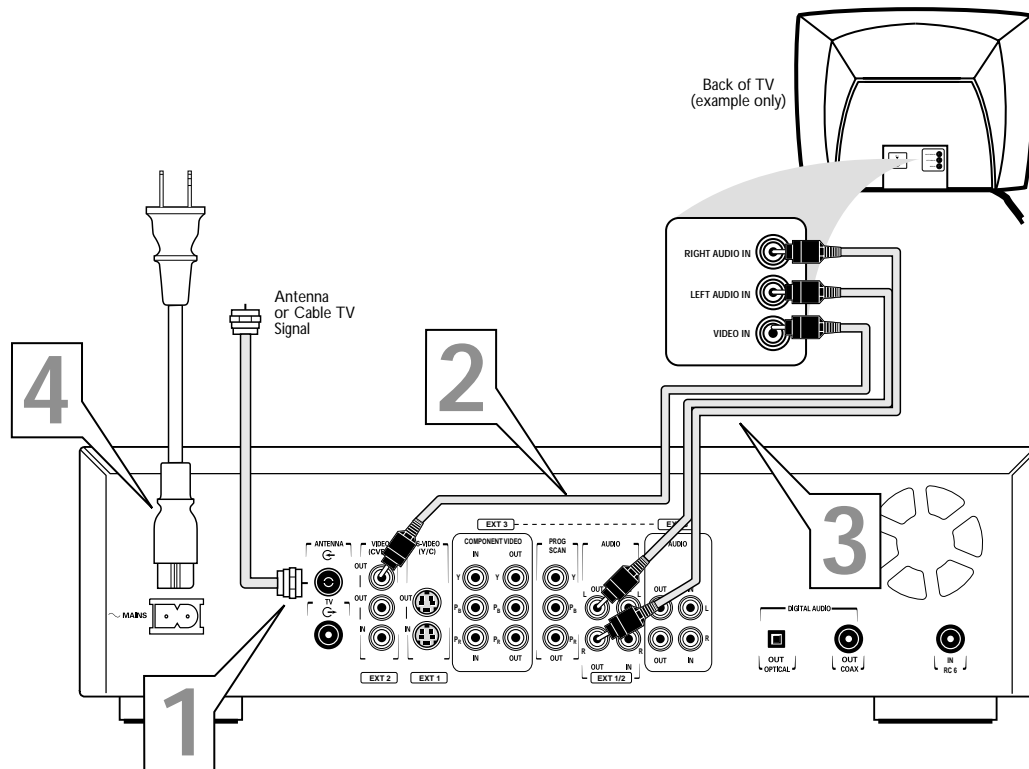
- 1** Connect your Antenna or Cable TV signal to the **ANTENNA** jack on the rear of the DVD Recorder.
- 2** Connect the supplied S-Video cable to the **S-VIDEO OUT (Y/C) (EXT 1)** jack of the DVD Recorder and to the TV's **S-VIDEO In** jack.
- 3** Connect a supplied two-strand audio cable to the red and white **AUDIO OUT (EXT 1/2)** left and right jacks on the DVD Recorder and to the left/right **AUDIO IN** jacks on the TV. The supplied two-strand audio cable has red and white stripes on the cable ends. Match the cable stripe colors to the jack colors.
- 4** Connect the supplied power cord to the **MAINS (AC Power)** jack on the rear of the DVD Recorder. Connect the power cords of the DVD Recorder and the TV to a power outlet.
- 5** Press the **STANDBY-ON** button on the front of the DVD Recorder to turn on the DVD Recorder. The STANDBY-ON light will turn green.
If "TURN ON TV" appears on the display panel, you need to turn on your TV and set it to the correct S-Video In channel. (See next step.) This is part of the Initial Setup of the DVD Recorder. You cannot see the Initial Setup screens until you turn on the TV and have it on the right S-Video In channel.
- 6** Turn on the TV power. Set the TV to the **S-Video In** channel. This is not channel 3 or 4 as it might be when using a VCR. See your TV owner's manual for details. Or, go to your lowest TV channel and change channels down until you see the DVD background picture or Initial Setup screen on the TV screen. The Initial Setup screen will appear the first time you turn on the Recorder. Go to page 16 to continue.


Helpful Hints

- On the TV, the S-Video In jack may be labeled Y/C, S-Video, or S-VHS (super video).
- If you plan to watch your TV with the DVD Recorder off, connect the supplied RF coaxial cable to the Recorder's TV jack and to the RF IN or ANTENNA IN jack (75 ohm) on your television. This lets you watch channels at the TV normally when the DVD Recorder is off and will improve the reception at your TV.

12 Hookups (cont'd)

Connecting to a TV Only TV has a yellow CVBS Video In jack

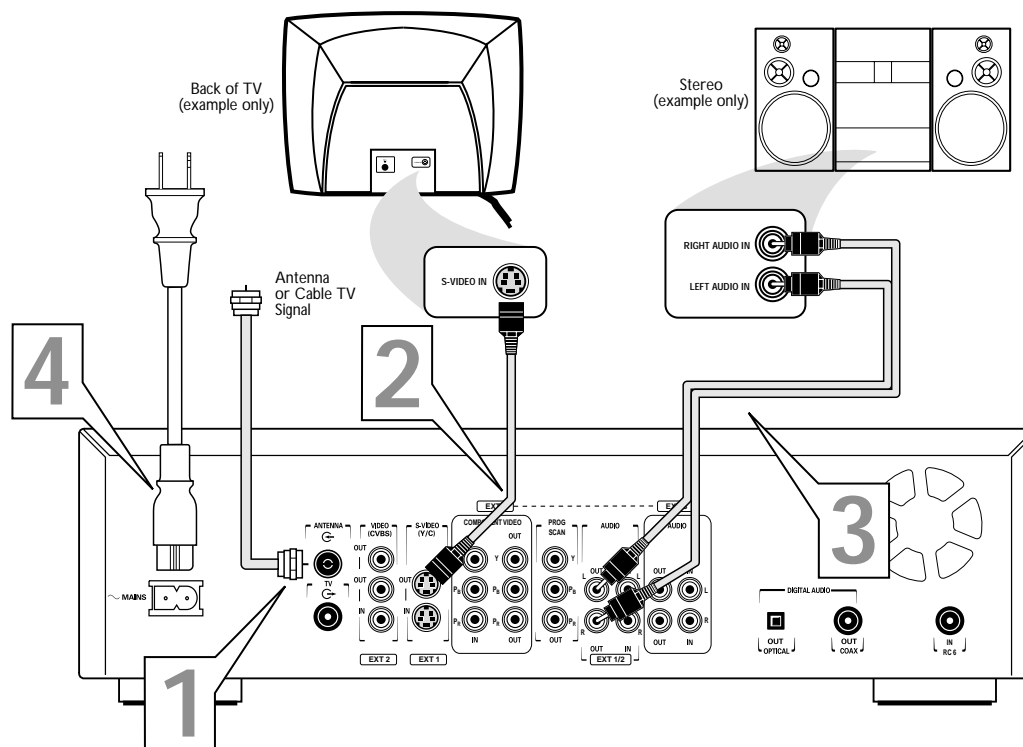


- 1** Connect your Antenna or Cable TV signal to the **ANTENNA** jack on the rear of the DVD Recorder.
- 2** Connect the yellow **VIDEO OUT (CVBS) (EXT 2)** jack of the DVD Recorder to the corresponding **VIDEO IN** jack on your TV. Use the supplied video cable, which has a yellow stripe on the cable end.
- 3** Connect a supplied two-strand audio cable to the red and white **AUDIO OUT (EXT 1/2)** left and right jacks on the DVD Recorder and to the left/right **AUDIO IN** jacks on the TV. The supplied two-strand audio cable has red and white stripes on the cable ends. Match the cable stripe colors to the jack colors.
- 4** Connect the supplied power cord to the **MAINS (AC Power)** jack on the rear of the DVD Recorder. Connect the power cords of the DVD Recorder and the TV to a power outlet.
- 5** Press the **STANDBY-ON**  button on the front of the DVD Recorder to turn on the DVD Recorder. The **STANDBY-ON** light will turn green.
If "TURN ON TV" appears on the display panel, you need to turn on your TV and set it to the correct Video In channel. (See next step.) This is part of the Initial Setup of the DVD Recorder. You cannot see the Initial Setup screens until you turn on the TV and have it on the right Video In channel.
- 6** Turn on the TV power. Set the TV to the correct **Audio/Video In** channel. Such channels may be called **AUX** or **AUXILIARY IN**, **AUDIO/VIDEO** or **A/V IN**, **EXT1** or **EXT2** or **External In**, etc. This is not channel 3 or 4 as it might be when using a VCR. See your TV owner's manual for details. Or, go to your lowest TV channel and change channels down until you see the DVD background picture or Initial Setup screen on the TV screen.
The Initial Setup screen will appear the first time you turn on the Recorder. Go to page 16 to continue.

Helpful Hints

- On the TV, the Video In jack is usually yellow and might be labeled video, CVBS, composite, or baseband.
- If you plan to watch your TV with the DVD Recorder off, connect the supplied RF coaxial cable to the Recorder's TV jack and to the RF IN or ANTENNA IN jack (75 ohm) on your television. This lets you watch channels at the TV normally when the DVD Recorder is off and will improve the reception at your TV.

Connecting to a TV and a two-channel Stereo (Stereo has Dolby Pro Logic or right/left Audio In jacks)



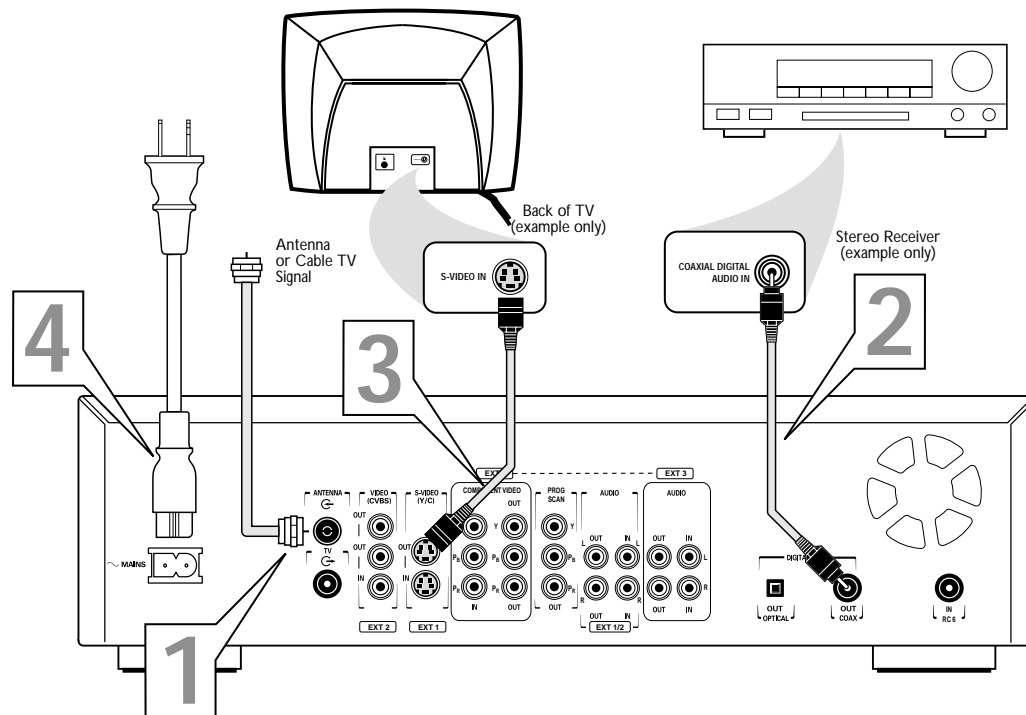
- 1** Connect your Antenna or Cable TV signal to the ANTENNA jack on the rear of the DVD Recorder.
- 2** Connect the supplied S-Video cable to the S-VIDEO OUT (Y/C) (EXT 1) jack of the DVD Recorder and to the TV's S-VIDEO IN jack.
- 3** Connect a supplied two-strand audio cable to the red and white AUDIO OUT (EXT 1/2) left and right jacks on the DVD Recorder and to the left/right AUDIO IN jacks on the Stereo. The supplied two-strand audio cable has red and white stripes on the cable ends. Match the cable stripe colors to the jack colors.
- 4** Connect the supplied power cord to the MAINS (AC Power) jack on the rear of the DVD Recorder. Connect the power cords of the DVD Recorder, Stereo, and TV to a power outlet.
- 5** Turn on the Stereo power and set your Stereo to the correct Audio In channel or sound source. Refer to the Stereo owner's manual.
- 6** Press the **STANDBY-ON** button on the front of the DVD Recorder to turn on the DVD Recorder. The STANDBY-ON light will turn green.
If "TURN ON TV" appears on the display panel, you need to turn on your TV and set it to the correct S-Video In channel. (See next step.) This is part of the Initial Setup of the DVD Recorder. You cannot see the Initial Setup screens until you turn on the TV and have it on the right S-Video In channel.
- 7** Turn on the TV power. Set the TV to the correct S-Video In channel. This is not channel 3 or 4 as it might be when using a VCR. See your TV owner's manual for details. Or, go to your lowest TV channel and change channels down until you see the DVD background picture or Initial Setup screen on the TV screen.
The Initial Setup screen will appear the first time you turn on the Recorder. Go to page 16 to continue.

Helpful Hints

- Set the Analog output accordingly. Details are on page 57.
- If you prefer or need to use the VIDEO OUT (CVBS) or COMPONENT VIDEO OUT Y Pb Pr jacks instead, see pages 10 and 12. You only need one video connection. Remember to choose the correct Video In channel at the TV.
- If you plan to watch your TV with the DVD Recorder off, connect the supplied RF coaxial cable to the Recorder's TV jack and to the RF IN or ANTENNA IN jack (75 ohm) on your television. This lets you watch channels at the TV normally when the DVD Recorder is off and will improve the reception at your TV.

14 Hookups (cont'd)

Connecting to a TV and a Stereo Receiver (Receiver has Dolby Digital™, MPEG2, or Digital Theater System)



1 Connect your Antenna or Cable TV signal to the ANTENNA jack on the rear of the DVD Recorder.

2 Connect one of the DVD Recorder's DIGITAL AUDIO OUT jacks (COAX (coaxial) or OPTICAL) to the corresponding DIGITAL AUDIO IN jack on your Stereo. You only need one connection. Use an appropriate digital audio cable (not supplied).

3 Connect the supplied S-Video cable to the S-VIDEO OUT (Y/C) (EXT 1) jack of the DVD Recorder and to the TV's S-VIDEO IN jack.

4 Connect the supplied power cord to the MAINS (AC Power) jack on the rear of the DVD Recorder.
Connect the power cords of the DVD Recorder, Stereo, and TV to a power outlet.

5 Turn on the Stereo power and set your Stereo to the correct Digital Audio In channel or sound source. Refer to the Stereo owner's manual.

6 Press the **STANDBY-ON** button on the front of the DVD Recorder to turn on the DVD Recorder. The STANDBY-ON light will turn green.
If "TURN ON TV" appears on the display panel, you need to turn on your TV and set it to the correct S-Video In channel. (See next step.) This is part of the Initial Setup of the DVD Recorder. You cannot see the Initial Setup screens until you turn on the TV and have it on the right S-Video In channel.

7 Turn on the TV power. Set the TV to the correct S-Video In channel. This is not channel 3 or 4 as it might be when using a VCR. See your TV owner's manual for details. Or, go to your lowest TV channel and change channels down until you see the DVD background picture or Initial Setup screen on the TV screen.
The Initial Setup screen will appear the first time you turn on the Recorder. Go to page 16 to continue.

Helpful Hints

- Set the Digital output accordingly. Details are on page 56.
- If your Digital Output setting does not match your Stereo's capabilities, the Stereo may produce a strong, distorted sound or no sound at all.
- Your Stereo must support MPEG2, Dolby Digital™ or Digital Theater System (DTS). Check the Stereo's manual.
- To use the VIDEO OUT (CVBS) or COMPONENT VIDEO OUT Y Pb Pr jacks instead, see pages 10 and 12. Remember to choose the correct Video In channel at the TV.
- A small, square, black cap protects the OPTICAL jack when it is not in use. Remove the cap if you want to use the jack; replace the cap when the jack is not in use.
- If you plan to watch your TV with the DVD Recorder off, connect the supplied RF coaxial cable to the Recorder's TV jack and to the RF IN or ANTENNA IN jack (75 ohm) on your television. This lets you watch channels at the TV normally when the DVD Recorder is off and will improve the reception at your TV.

Connecting to Other Equipment (Cable Box, VCR, Satellite Receiver, etc.)

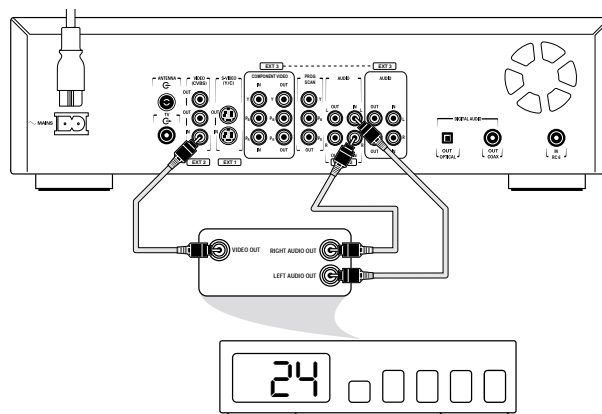
- After connecting the DVD Recorder directly to your TV, additional IN jacks will be available on the rear of the Recorder. You can connect a Cable Box, Video Cassette Recorder (VCR) or DVD Player to these jacks. The example shows a Cable Box connection.
- To watch the material playing on the other equipment as usual, turn off the DVD Recorder.

Cable Box/Satellite Receiver

- To watch TV, put the Recorder in Monitor mode. (Press MONITOR on the Recorder's remote.) Change TV channels at your Cable Box/Satellite Receiver. If your Cable Box/Satellite Receiver has Audio/Video Out jacks as shown in this example, set the Recorder to an EXT channel. Choose the channel that corresponds to the jacks you used on the rear of the DVD Recorder. For example, if you connected a Cable Box to the EXT 2 IN jacks as shown, choose channel EXT 2 at the Recorder in Monitor mode. Or, if your Cable Box/Satellite Receiver has a single RF Out/TV Out/Antenna Out/75 ohm jack, set the Recorder to channel 3 or 4.

VCR/DVD Player

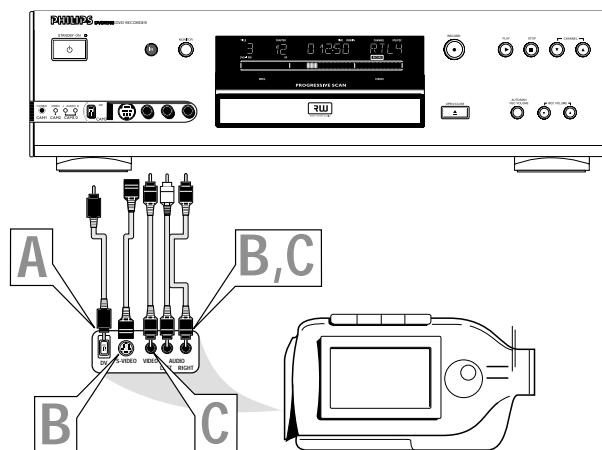
- Most prerecorded video cassettes and DVDs are copy protected. If you try to copy them with the DVD Recorder, the Recorder display may show "COPY PROTECT."
- If you record material that is playing on a VCR onto a DVD+RW/DVD+R, adjust the tracking on the VCR first. If the Recorder's display shows "NO SIGNAL," adjust the tracking. See your VCR owner's manual for details on tracking adjustment.
- Do not connect a Progressive Scan video source (such as a DVD Player) to the COMPONENT VIDEO IN jacks (EXT3). The DVD Recorder cannot receive Progressive Scan video.
- Connect the DVD Recorder directly to the TV. Do not connect the DVD Recorder to a VCR, then connect the VCR to a TV.



For detailed Cable Box, Satellite Receiver, VCR, or DVD Player hookups, see the Quick Start Guide.

Connecting to a Camcorder (optional)

- A** If you have a DV (Digital Video) or Digital 8 camcorder, connect the Recorder's DV I-LINK In jack to the Camcorder's I-LINK OUT jack. Use an i-link cable (not supplied).
- B** If you have a Hi-8 or S-VHS camcorder, connect an S-Video cable to the Recorder's S-VIDEO IN jack and to the camcorder's S-Video Out jack. Connect Audio cables to the AUDIO IN (Left and Right) jacks on the front of the Recorder and to the AUDIO OUT jacks on the camcorder.
- C** If the camcorder has a composite-style Video out jack (usually yellow), connect a video cable to the DVD Recorder's VIDEO IN jack and to the camcorder's Video Out jack. Connect Audio cables to the AUDIO IN (Left and Right) jacks on the front of the DVD Recorder and to the AUDIO OUT jacks on the Camcorder.



- To see the camcorder picture on your TV, select the correct channel at the Recorder and the TV. At the Recorder, in Monitor mode, choose CAM1, CAM2, or CAM3. *Details are on page 19.* At the TV, choose the TV channel that corresponds to the jacks you used on the rear of the Recorder to connect the Recorder to the TV. The TV's Video In channel may be referred to as Video In, Aux or Auxiliary In, Audio/Video or A/V In, External or EXT IN, etc. If you have trouble finding the right channel, keep changing TV channels down until you see the camcorder image on the TV.
- You cannot duplicate copyrighted DVDs or videotapes using the DVD Recorder. "COPY PROTECT" will appear on the display panel if you try to dub copyrighted material onto a DVD+R or DVD+RW using the DVD Recorder.
- To copy videotapes, see the Quick Start Guide.**

Helpful Hints

- You also can use the DV I-LINK jack to connect the DVD Recorder to a Personal Computer. The PC must have an IEEE 1394 Firewire connector. Limited PC applications may be supported.
- To access the jacks on the front of the Recorder, remove the protective cover by gently pulling the left side of the cover toward you. Replace the cover when the jacks are not in use.

16 Initial Setup


Initial Setup screens will appear the very first time you turn on the Recorder. These on-screen messages and menus will help you set up Recorder features quickly, including TV channels and language options.

During Initial Setup, "TURN ON TV" will appear on the Recorder's display panel. This appears in addition to the Initial Setup information that shows on your TV screen.

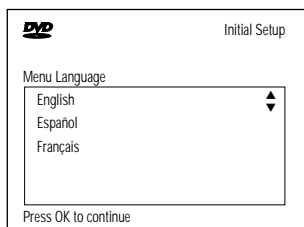
"TURN ON TV" indicates you should turn on your television and set it to the correct Video In channel. Even though your TV may be on, you must set it to the correct Video In channel to see the Initial Setup messages. See pages 9-14 to determine the correct Video In channel for your connection. Or, check your TV owner's manual for details.

Follow the steps below to set up the Recorder as directed on the TV screen. **You can not turn off the Recorder until you finish the Initial Setup. The only way to quit the Initial Setup is to disconnect the power cord. If you quit, the Initial Setup screens will appear again the next time you turn on the Recorder. The screens will not go away until you finish the Initial Setup. Also, you cannot open the Disc tray while "TURN ON TV" appears.**

If the setup screens do not appear, your Recorder has been set up previously. You can always change setup items later. For details on how to change these items later, see the pages listed at each step below for each feature.

1 Press ON/OFF  to turn on the Recorder.

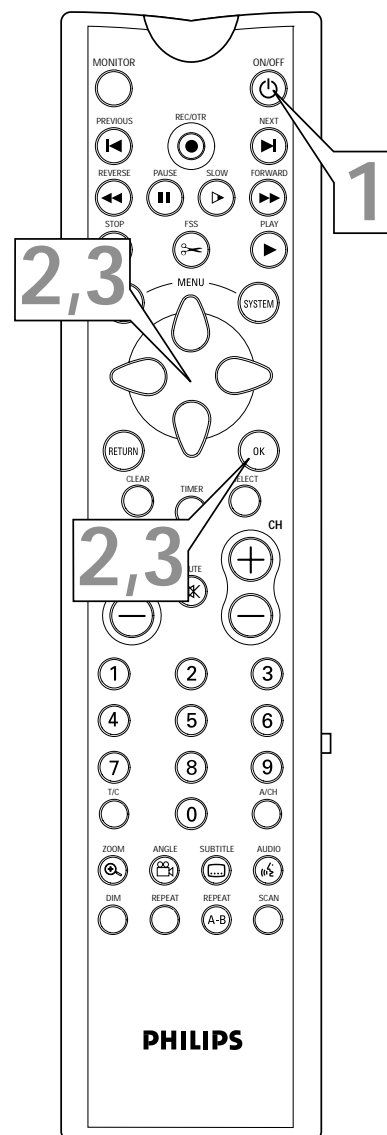
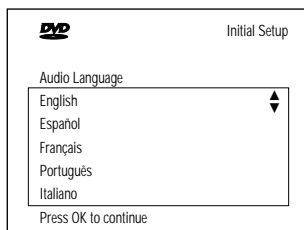
2 The Menu Language screen will appear first. Press **▼▲** to choose **English, Espanol, or Francais**, then press the **OK** button. The DVD Recorder's menus will be in the language you selected. *To change the Recorder's Menu Language settings later, see page 58.*



3 The Audio Language menu appears next. Press **▼▲** to choose **the language you prefer, then press OK.**

The Recorder will automatically play Discs in the language you selected if the language is available on the Disc. The DVD Disc menu will appear in the same language, if available on the Disc. Some Discs require you to choose the audio language or the Disc Menu language from the Disc menu. The Disc preferences or defaults may override your selection in the Recorder's Audio Language menu.

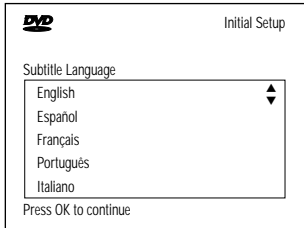
To change the Audio Language settings later (as Playback Audio), see page 58.



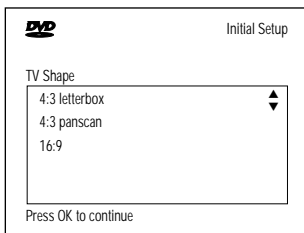
Continued on page 17

Continued from previous page

- 4** The Subtitle Language menu appears next. **Press ▼▲ to choose the language you prefer for subtitles, then press OK.** The Recorder will automatically show subtitles in the language you selected if subtitles are available in that language on the Disc. If your selected subtitle language is not available, either there will be no subtitles or subtitles will be in the default language of the Disc. Some DVDs require you to choose a subtitle language from the Disc menu. Disc preferences or defaults may override your selection in the Recorder's Subtitle Language menu.
To change the Subtitle Language settings later, see pages 29 and 58.

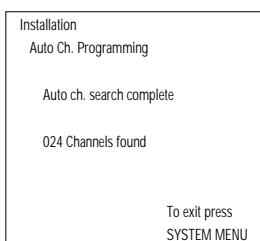


- 5** The TV Shape menu appears next. **Press ▼▲ to choose the preferred TV Shape, then press OK.**
To change the TV Shape later or for details on TV Shapes, see page 55.

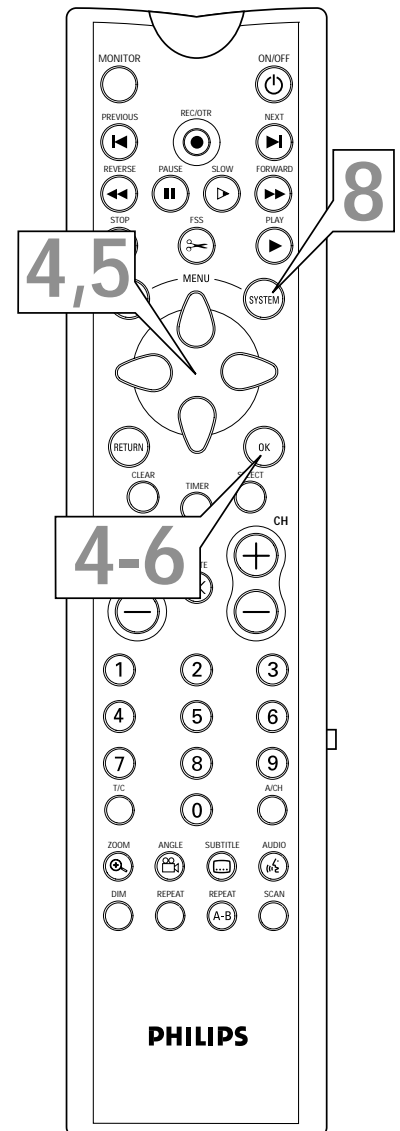


- 6** "If you have connected the antenna - press OK" appears next. **If you have connected an Antenna or Cable TV signal to the Recorder's ANTENNA jack, press OK.** If you have not connected the Antenna or Cable TV signal, take a moment now to do so. After the Antenna/Cable TV signal is connected, press OK. Details are on pages 10-14.
To reset TV channels later, or to add/delete new channel choices later, see page 36.

- 7** "Searching for TV channels" will appear, along with a scale showing channels are being memorized. The number of channels found will show on the screen as the searching progresses. This will take a few minutes, depending on the number of channels available in your area.
When the channel search finishes, "Auto ch. search complete" will appear, along with the total number of channels found.

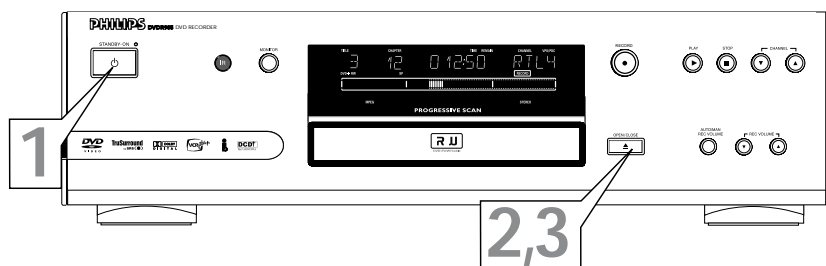


- 8** Press **SYSTEM MENU**. The Recorder is ready for use!



18 Quick Disc Playback

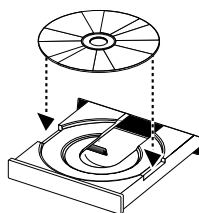
DVD+RW DVD+R DVD AUDIO CD VIDEO CD



There are many playback features and options available on Discs. After familiarizing yourself with the DVD Recorder as described on pages 20-27, see pages 28 and following to try additional features.

1 Press **STANDBY-ON** to turn on the DVD Recorder. The STANDBY-ON light will be green when the power is On. **Turn on your TV. Set it to the correct Video In channel.** Details are on pages 9-14. You should see the blue Philips DVD background picture on the TV screen (if no Disc is in the Recorder).

2 Press **OPEN/CLOSE** on the front of the DVD Recorder to open the disc tray. **Load your Disc in the tray**, with the label facing up and the shiny side facing down. If the Disc (DVD) is two-sided, make sure the label of the side you want to play is facing up.



3 Press **OPEN/CLOSE** again to close the tray.

4 **Playback may start automatically. If not:**

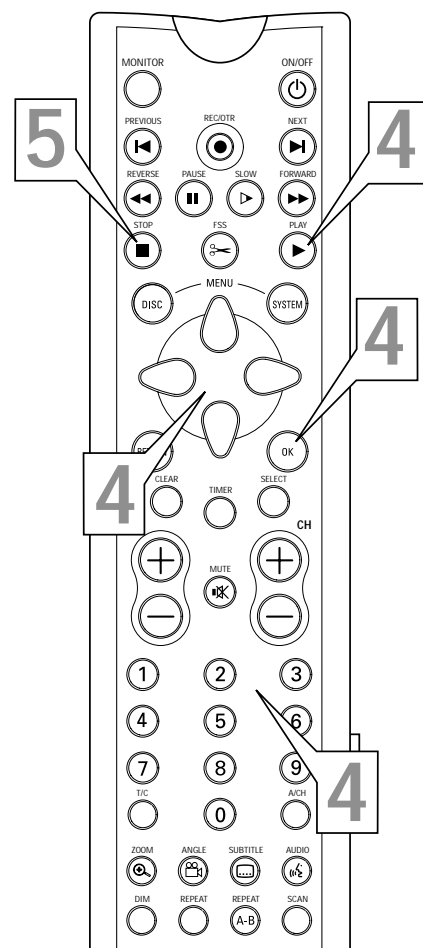
- If you are playing a DVD, a Disc menu may appear. If the Title or Chapter selections are numbered, press a Number button to select an item. Or, press to select an item, then press OK. Playback will begin. Or, follow the on-screen instructions as detailed in the DVD Disc menu.
- If you are playing an Audio CD, press **PLAY** to start playback.
- If you are playing a DVD+RW/DVD+R, the Index Picture Screen will appear. Details are on page 35. Press to select the Title you want to play, then press OK. If the Disc is blank, the display will show "EMPTY DISC."

5 **To stop playback at any time, press STOP** .

If Auto resume is On, play will resume at the same point the next time you play the disc. To play the Disc from its beginning, restart play from the Disc menu.

If Auto resume is Off, Resume will appear in the top left corner when you start to play the Disc later. While Resume appears, press **PLAY** to resume playback from the point at which you last stopped it. Otherwise, Resume will disappear after about five seconds and play will start at the beginning of the Disc.

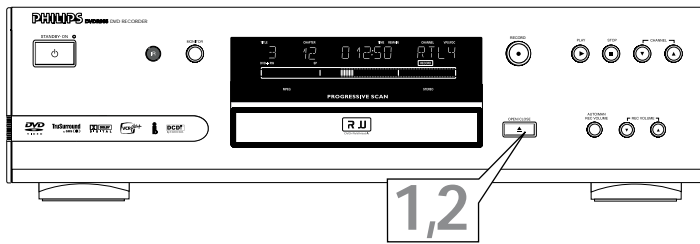
Auto resume is On when you purchase the DVD Recorder. However, you can turn it On or Off. Details are on page 54.



Helpful Hints

- If the Disc is Locked by Access Control, you must enter the four-digit code or authorize the Disc. Details are on pages 49-53.
- DVDs have a region code. Your Recorder will not play Discs that have a region code different from the region code of your Recorder. The Recorder's region code is 1 (one). Details are on page seven.

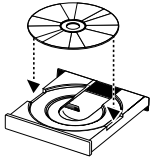
DVD+RW DVD+R



The DVD Recorder can record TV programming onto a DVD+RW or DVD+R. Before you begin, make sure you have installed the TV channels. *Details are on pages 16-17 and 36.* Use an unprotected, unfinalized, recordable DVD+RW or DVD+R. More recording options are on pages 40-46.

1 Press **OPEN/CLOSE** on the front of the DVD Recorder to open the disc tray. Or, press and hold **STOP** on the remote control for about three seconds to open or close the Disc tray.

2 Insert a recordable DVD+RW/DVD+R, with the label facing up. Press **OPEN/CLOSE** to close the disc tray. The Index Picture Screen will appear. *Details are on page 35.* If the Disc is empty and has no recordings, "EMPTY DISC" will appear on the display panel.



3 Press to select an empty Title box on a DVD+RW. To avoid overwriting previous recordings on a DVD+RW, choose the last Empty Title box. On a DVD+R, the Recorder automatically starts recording at the end of the Disc, so you do not need to select an Empty Title box. You can not overwrite recordings on a DVD+R.

4 Press **MONITOR** to see TV channels through the DVD Recorder.

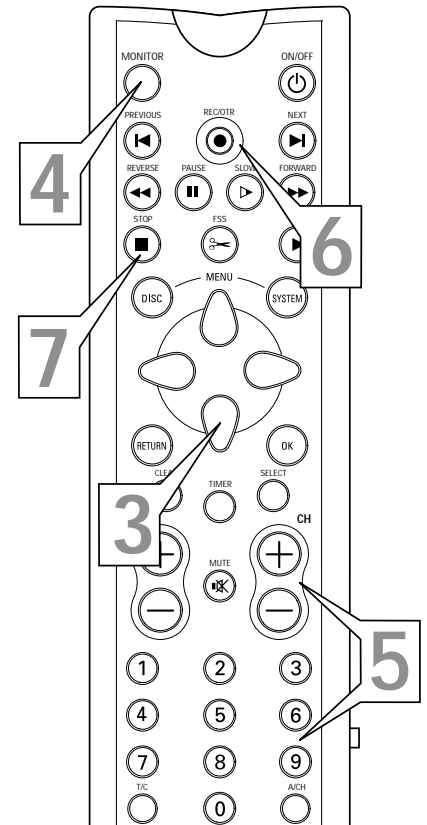
5 Press **CH+/-** or the **Number** buttons to select the channel you wish to record. You cannot change channels during recording. You can only record the channel you are watching. You cannot record one channel while watching a different TV channel.

To record material playing on equipment you connected to the Recorder, select EXT1, EXT2, EXT3, CAM1, CAM2, or CAM3. Choose the EXT (External) or CAM (Camera) channel that matches the jack to which you connected the other equipment. For example, if you connected a camcorder to the S-VIDEO CAM1 jack on the front of the DVD Recorder, press CH+/- to choose CAM1. CAM1 will appear in the Tuner Information Box. *Details are on page 27.*

If you are using a Cable Box/Satellite Receiver, set the DVD Recorder to channel 3 or 4 in Monitor mode. (Choose the output channel of your Cable Box/Satellite Receiver.) Then, change TV channels at the Cable Box/Satellite Receiver.

6 Press **REC/OTR** to begin recording the selected channel. RECORD will appear in red on the Recorder's display panel. Recording will begin after a few seconds. (The Disc has to prepare for recording.) To pause recording, press **PAUSE** once on the remote control.

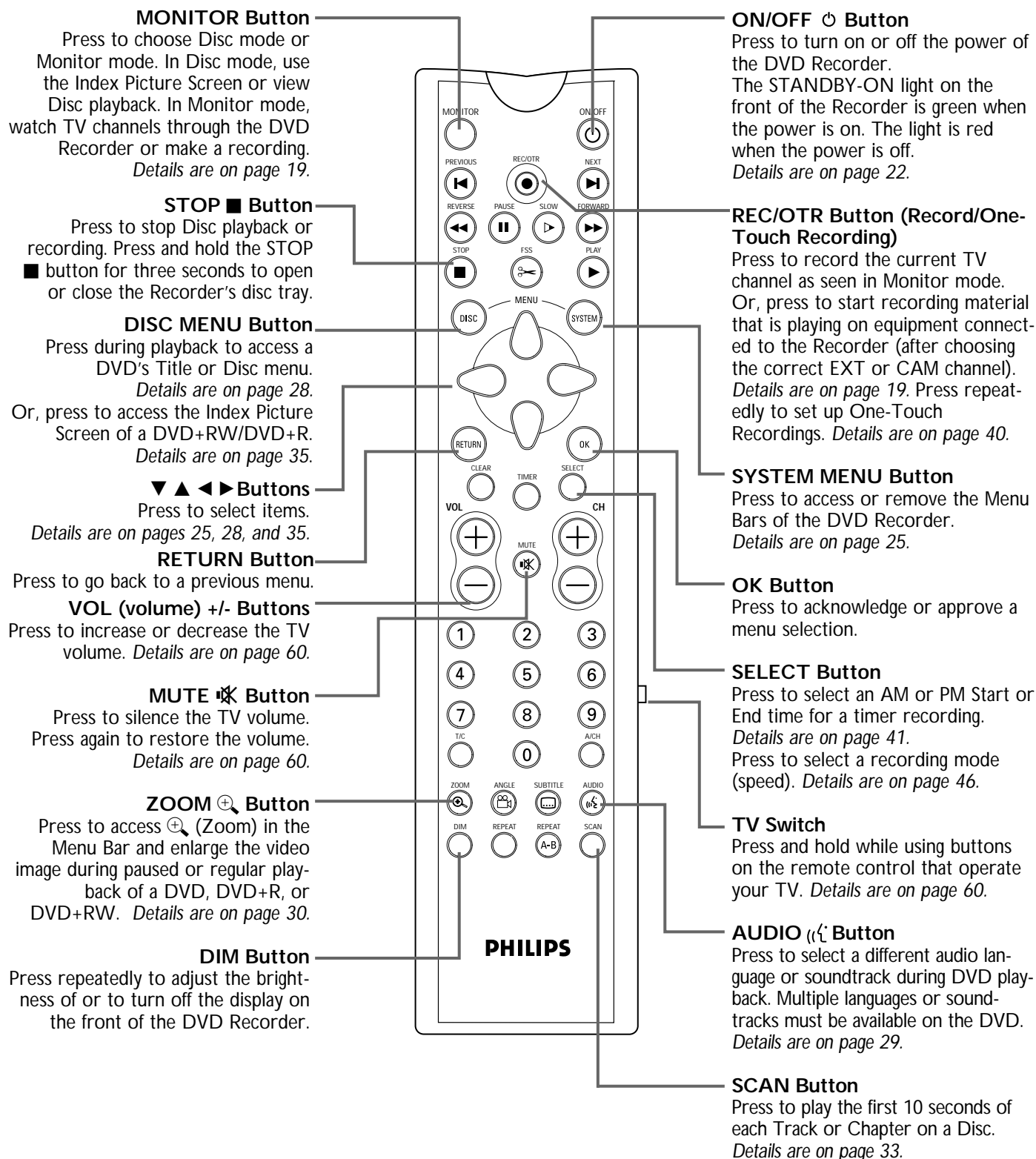
7 Press **STOP** to stop recording. RECORD will flash briefly on the display panel. The Index Picture Screen will reappear after a few seconds. On a brief recording on a new DVD+RW, formatting the Disc will take a minute. *If you plan to play a DVD+R on another DVD Player, finalize the Disc. Follow the steps on page 47, choosing "Finalize Disc" at step 4.* To edit your recordings, see page 48. However, editing changes may not be accessible when you play the Disc on other DVD Players. You cannot record or edit a DVD+R after you finalize it.



Helpful Hints

- You can not record only Audio (sound) to a DVD+RW/DVD+R. You must record both audio and video (sound and picture).
- Refer to the separate Quick Start Guide for details on recording from a VCR or Camcorder (copying videotapes to a DVD+R or DVD+RW).
- To erase a recording, see "Erase this title" details on page 44.
- You cannot duplicate copyrighted DVDs, videotapes, or TV broadcasts using the Recorder. "COPY PROTECT" will appear on the display panel if you try to dub copyrighted material onto a DVD+R or DVD+RW.

20 Remote Control Buttons



PREVIOUS ◀ Button
Press to return to the beginning of the current Chapter/Track. Or, press repeatedly to return to the beginning of previous Chapters/Tracks.
Details are on page 28.

REVERSE ◀◀ Button
Press to search backward, or fast reverse, during playback. Press repeatedly to play the Disc backward at 4 or 32 times the normal speed.
Details are on page 32.

FSS Button (Favorite Scene Selection)
Press to display or remove the Favorite Scene Selection menu during playback of a DVD+R or DVD+RW.
Details are on page 48.

CLEAR Button
Press to delete the last entry of information into a menu. Press to clear a timer recording.
Details are on page 43.

T/C (Title/Chapter) Button
Press to select "T" (Title/Track) or "C" (Chapter) in the Menu Bar. (Press T/C repeatedly to toggle between T or C in the Menu Bar.) Then press ▼▲ to select the Title, Track, or Chapter number you want to play. The Title/Track/Chapter will start to play automatically. This button has no effect during Monitor mode.

ANGLE Button
Press to select a different camera angle during DVD playback. Multiple angles must be available on the Disc.
Details are on page 30.

REPEAT Button
Press repeatedly to play a Chapter, Title, Track, or Disc repeatedly.
Details are on page 34.

REPEAT A-B Button
Press to set up Repeat A-B playback, in which a certain segment of the Track or Chapter plays repeatedly.
Details are on page 34.

SLOW ▶ Button
Press repeatedly to select a slow motion speed. You can choose to play the Disc at 1/2, 1/4, or 1/8 the normal speed.
Details are on page 32.

NEXT ▶▶ Button
Press to skip to the next Chapter or Track during playback.
Details are on page 28.

FORWARD ▶▶▶ Button
Press to search forward, or fast forward, during Disc playback. Press repeatedly to play the Disc forward at 4 or 32 times the normal speed.
Details are on page 32.

PLAY ▶ Button
Press to begin Disc playback.

PAUSE || Button
Press once to pause playback. Press repeatedly to advance a paused DVD, DVD+RW, DVD+R, or Video CD picture one frame at a time (frame-by-frame playback).
Details are on page 31.

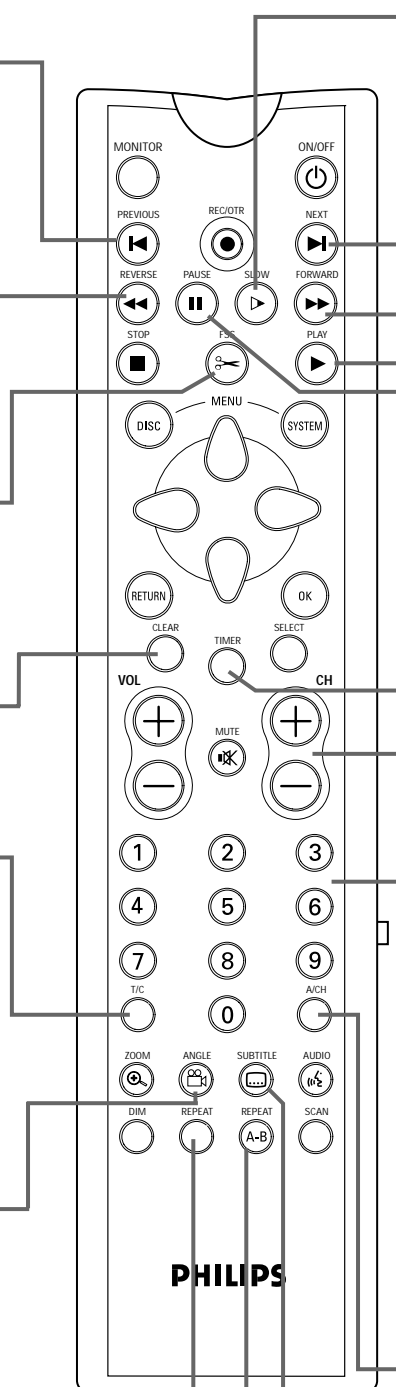
TIMER Button
Press to access or remove the Timer Recording menu.
Details are on pages 41-43.

CH (channel) +/- Buttons
Press to select a TV channel in Monitor mode.

Number Buttons
Press to select numbered items in a menu.
Details are on page 18. Press during playback to directly select a Chapter (within the current Title) or Track for playback.
Details are on page 28. Press to select a TV channel while in Monitor mode.


A/CH (Alternate Channel) Button
Press to return to the previously selected TV channel while the Recorder is in Monitor mode.

SUBTITLE ☐ Button
Press repeatedly during playback to select a subtitle language from those available on the current Disc.
Details are on page 29.



22 Front Panel

STANDBY-ON Button and Light

Press the STANDBY-ON  button to turn on or off the power of the DVD Recorder. The STANDBY-ON light will be red if the DVD Recorder power is off (standby). The STANDBY-ON light will be green when the power is on.

IR (infrared) remote sensor

The sensor receives signals from the remote. Point the remote here, not at your TV, when using the remote control to operate the DVD Recorder.

MONITOR button

Press to choose disc mode or Monitor mode. In disc mode, use the Index Picture Screen, view Disc playback, or make recordings. In Monitor mode, watch or record TV channels through the DVD Recorder. *Details are on page 19.*

Display

Information about the current status of the Recorder appears here. *Details are on page 23.*

CHANNEL buttons

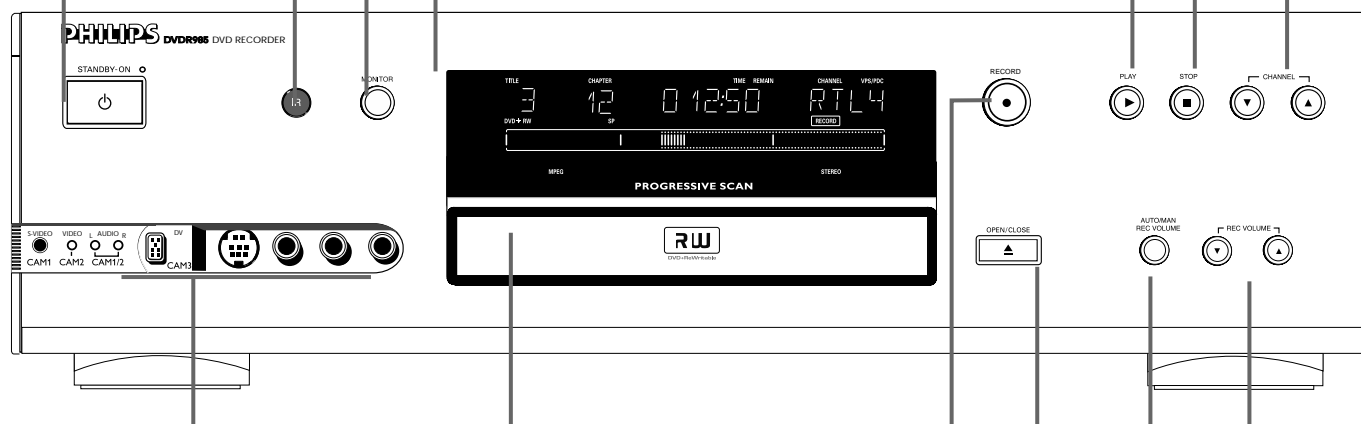
Press to change TV channels while in Monitor mode.

STOP button

Press to stop playback or recording.

PLAY button

Press to begin Disc playback.



DV (digital video) i-LINK (CAM3); S-VIDEO In (CAM1); VIDEO In (CAM2); and AUDIO In (CAM1/2) jacks

To access these jacks, remove the protective cover by pulling the left side of the cover toward you. Replace the cover when the jacks are not in use.

Use these jacks when connecting a camcorder or other equipment to the DVD Recorder. *Details are on page 15.* When recording material that is playing on the other equipment, choose the CAM (Camera) channel that corresponds to the jack to which the equipment is connected. *Details are on page 19.*

The descriptions/names of each jack are to the left of the jacks, in order from left to right.

If your Personal Computer has an IEEE 1394 Firewire connector, you may connect it to the Recorder's DV i-LINK jack. Limited applications may be available.

RECORD button

Press to begin recording the currently selected TV channel or source. *Details are on page 19.*

OPEN/CLOSE button

Press to open or close the Disc tray.

*AUTO MAN REC VOLUME button (Automatic/Manual Recording Volume)

Press to adjust the recording volume automatically or manually. *Details are on page 45.*

REC VOLUME buttons

Press to increase or decrease the volume when manually adjusting the recording volume. *Details are on page 45.*

Disc Tray

Insert a Disc here. Load the Disc with the label facing up. *Details are on page 18.*

DVD+RW DVD+Rewritable inserted
(as shown in example below)
DVD+R DVD+Recordable inserted
DVD DVD inserted
VCD Video CD inserted
CD Audio CD inserted
SVCD Super Video CD inserted

TITLE
Current Title number

TRACK
Current Track number

HQ, SP, LP, or EP
High Quality, Standard Play, Long Play, or
Extended Play; Current recording mode, or
the recording speed in which the current
Chapter was recorded. *Details are on page 46.*

CHAPTER
Current Chapter number

RC
Remote Control command received

TRACK TIME
Elapsed playing time of the current
Track in hours, minutes, and seconds;
appears during playback.

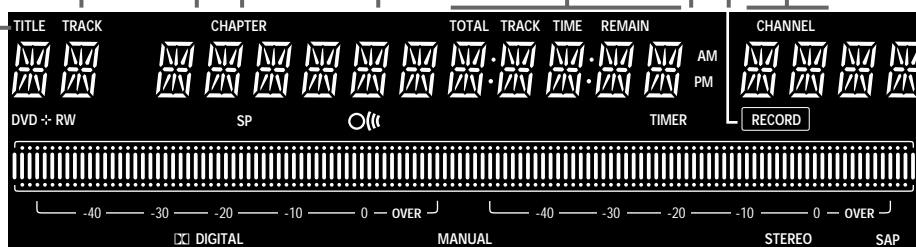
TOTAL TIME
Total playback or recording time in
hours, minutes, and seconds; appears
when playback is stopped.

TIME REMAIN
Remaining time of Disc (according to
current recording mode if recording)

CHANNEL
Current TV channel number

RECORD
Recording in progress

TIMER
A timer recording is scheduled or is
occurring. **TIMER** flashes just before a
timer recording is scheduled to begin if
the Recorder power is on.



MPEG, DIGITAL, DTS, or PCM
Audio format of the current Disc

MANUAL
Appears when you manually adjust the
recording volume. *Details are on page 45.*

STEREO
The current channel is broadcasting
in stereo. *Details are on page 58.*

SAP
The current TV channel is broadcasting
a second Audio Program.
Details are on page 58.

dB scale
Indicates the recording volume when
using the manual recording volume con-
trols. *Details are on page 45.*

Disc bar
Displays Disc content, recording volume
level, or formatting progress.

*Additional messages or information also will
appear on the display, for example "OPENING"
when the disc tray is opening. These messages
vary according to the current activity of the
Recorder or Disc.*

24 Rear Panel

MAINS (AC Power)

Connect the supplied AC power cord here and to a standard AC outlet after completing all other connections.

TV jack

Connect the supplied RF coaxial cable to the Recorder's TV jack and to the RF IN or ANTENNA IN jack (75 ohm) on your television. This lets you watch channels at the TV normally when the DVD Recorder is off.

ANTENNA jack

Connect your antenna or Cable TV signal here.
Details are on pages 10-14.

VIDEO IN (CVBS) (EXT2) jack

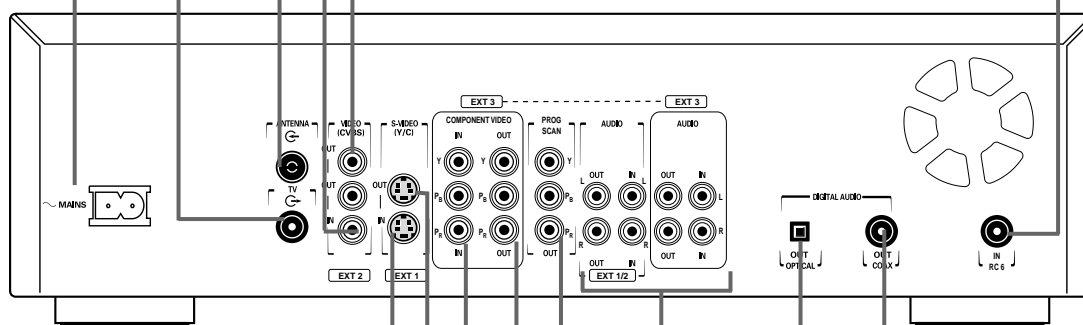
Use a video cable to connect this jack to the Video Out jack of other equipment. *Details are on page 15.*

VIDEO OUT (CVBS) (EXT2) jacks

Connect the supplied yellow-striped video cable to one of the VIDEO OUT (CVBS) jacks and to the TV's Video In jack. *Details are on page 12.* Use the extra VIDEO OUT (CVBS) jack to connect the Recorder to other equipment.

IN RC 6 jack

Connect a wired remote control (not supplied) to the IN RC 6 jack if you prefer. Ask your dealer for details on compatible remotes. The first signals from the remote control may be lost. The remote control supplied with the DVD Recorder will operate all the recorder's features.



S-VIDEO IN (Y-C) (EXT1) jack

Use an S-video cable to connect this jack to the S-Video Out jack of optional additional equipment. *Details are on page 15.*

S-VIDEO OUT (Y-C) (EXT1) jack

Connect the supplied S-Video cable here and to a TV's S-Video In jack. *Details are on page 11.*

COMPONENT VIDEO IN (Y Pb Pr) (EXT3) jacks

Connect these jacks to the Component Video Out jacks of optional additional video equipment (for example, a DVD Player). *Details are on page 15.*

COMPONENT VIDEO OUT (Y Pb Pr) (EXT3) jacks

Connect the supplied three-strand component video cable here and to the Component Video In jacks of a TV. *Details are on page 10.*

PROG SCAN OUT (Y Pb Pr) jacks (Progressive Scan)

Connect these jacks to a TV's Progressive Scan In jacks if the TV has Progressive Scan. Use the supplied three-strand component video cable. Match the cable stripe colors to the jack colors. If your TV does not have Progressive Scan, use the COMPONENT VIDEO OUT jacks instead. *Details are on page 10.* Also see your TV manual for details.

DIGITAL AUDIO OUT COAX (coaxial) jack

Connect a digital audio coaxial cable here and to the digital audio coaxial In jack of a Stereo. *Details are on page 14.*

DIGITAL AUDIO OUT OPTICAL jack

Connect a digital audio optical cable here and to the digital audio optical In jack of a Stereo. *Details are on page 14.*

AUDIO OUT/ IN (Left/Right) (EXT1/2 and EXT3) jacks

Use the supplied audio cables (with red and white stripes) to connect the Recorder's AUDIO OUT jacks to the Audio In jacks of a television or Stereo. *Details are on pages 10-13.* Use the AUDIO IN jacks when connecting additional equipment to the DVD Recorder. *Details are on page 15.*

Helpful Hints

- Each Audio and Video jack is labelled EXT1, EXT2, or EXT3. Use the same EXT (external) number for the audio and video connection to the TV. For example, if you use S-VIDEO OUT, which is EXT1, use the EXT1/2 AUDIO OUT jacks.
- Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may damage the unit permanently.
- You only need one audio and one video connection to a TV. You might not use all the jacks.

In addition to using the shortcut buttons on the remote control to select features, you can use the Menu Bars to operate features. You can not access the Menu Bars during recording.

When a Menu Bar is on the screen, press the ▼▲◀▶ buttons on the remote control to select an item or to change the setting of an item.

The ▼▲◀▶ symbols in the Menu Bar mean more items are available.

Menu Bar 1

***Press SYSTEM MENU once to access Menu Bar 1. The following items are in Menu Bar 1.** Depending on the available Disc features, you may not be able to access each item at all times. Only available features can be selected.



User Preference Settings Set your preferences for audio and video quality, depending on the equipment you connected to the DVD Recorder. Also set up Languages, Access Control, Record Settings, Remote Control settings, Installation features, and other DVD Recorder features.



Title Select to choose an available Title or Track for playback. Use the Number buttons or the ▲▼ buttons to select the Title you want. Playback will start automatically.



Chapter Select to choose an available Chapter for playback. Use the Number buttons or the ▲▼ buttons to select the Chapter you want. Playback will start automatically.



Audio Language If the current DVD has multiple audio soundtracks, choose one here. For example, some DVDs let you play the movie in other languages or hear a director's commentary during playback. Check the Disc case for details. *Details are on page 29.*



Subtitle Language If the current Disc has subtitles, select a language here. *Details are on page 29.*



Angle Select to choose a different camera angle, if available, during DVD playback. *Details are on page 30.*



Zoom Select to enlarge the DVD, DVD+R, or DVD+RW picture by 1.33, 2, or 4 times the normal size during playback. *Details are on page 30.*

Menu Bar 2

***While in Menu Bar 1, press ▶ repeatedly to move to Menu Bar 2. The following items are in Menu Bar 2.**



Sound Mode Select to choose a sound mode: Stereo (st), Dolby Surround compatible (sur), or 3D Sound (3d). *Details are on page 31.*



Frame-by-frame playback Select for forward or reverse frame-by-frame playback of a DVD, DVD+R, or DVD+RW. Press ▼, then press ◀ or ▶ to move the picture backward or forward one frame at a time. *Details are on page 31.*



Slow motion Select to slow the speed of DVD, DVD+R, or DVD+RW playback. *Details are on page 32.*



Fast motion Select to play a DVD, DVD+R, or DVD+RW forward or backward at four, eight, or 32 times the normal playback speed. Press ▼, then press ◀ or ▶ to choose a backward (-) or forward speed. *Details are on page 32.*





Time Search Select to enter a specific time within the current Track, Title, or Chapter at which you want playback to begin. *Details are on page 33.*


26 On-screen Symbols, Status Box


On-screen Symbols


The following symbols will appear briefly on the TV screen when you activate some Disc features.


 **Scan** The first 10 seconds of each Chapter/Track will play.
Details are on page 33.


 **Angle** Multiple angles are available.
Details are on page 30.


 **Repeat All** The entire Disc will play repeatedly.
Details are on page 34.


 **Locked** The current Disc is Locked and cannot play.
Details are on pages 49-53.


 **Repeat Title** The current Title will play repeatedly.
Details are on page 34.

 **Safe** The current Disc is authorized for playback.
Details are on pages 49-53.

 **Repeat Chapter** The current Chapter will play repeatedly.
Details are on page 34.

 **"X"** The feature you just attempted is not available on the current Disc or at the current time.








 **Repeat A** Point A for Repeat A-B playback has been entered.
Details are on page 34.

 **Repeat A-B** A segment of the Disc will play repeatedly.
Details are on page 34.

Status Box

The Status Box shows the current status of the Recorder and information about the current Disc, including Disc type, total playing time, and elapsed playing time. Set Status box to On if you want to see the following icons briefly when you access a feature. *Details are on page 54.*

Disc status icons

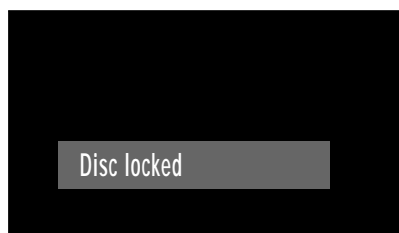
-  recording
-  stop
-  pause play
-  pause recording
-  fast forward at four times the regular speed
-  fast reverse at four times the regular speed
-  slow motion

Disc type icons

-  DVD+R
-  DVD+RW
-  DVD-Video
-  Super Video-CD
-  Video-CD
-  no Disc
-  Disc error

Warning box

Appears near the bottom of the screen when appropriate. *Examples and details are on page 43.*



Tuner Information box

Appears on the left side of the TV screen and identifies the current TV channel or Video source in Monitor mode. For example, if EXT1 appears in the Tuner Information Box, you can view or record the material that is playing on the equipment that is connected to the EXT1 AUDIO and VIDEO IN jacks on the rear of the Recorder.

Make sure you have connected an Antenna or Cable TV signal to the ANTENNA jack on the Recorder. *Details are on pages 10-14.* Press MONITOR to go into Monitor mode and view the TV channel or playback from other equipment.

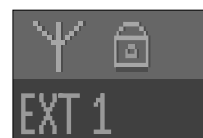
Current TV channel



No signal - Channel is not receivable or no equipment is connected to the designated jack.



Copy-protected signal



Timer Information box

Displays the start time or date of the next scheduled timer recording and appears in the Index Picture Screen. You cannot remove it from the Index Picture Screen.

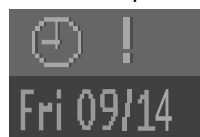
It may appear briefly at the beginning of a timed One-Touch Recording. It does not appear during recording or Disc playback.

In Monitor mode, the Timer Information box will appear for a few seconds, then disappear.

Timer recording due later today



Timer recording set for another day within the upcoming year



The time at which the current One-Touch Recording will end.



Current time; no timer recordings are scheduled.



28 Title/Disc Menus, Chapter/Track Selection

DVD+RW

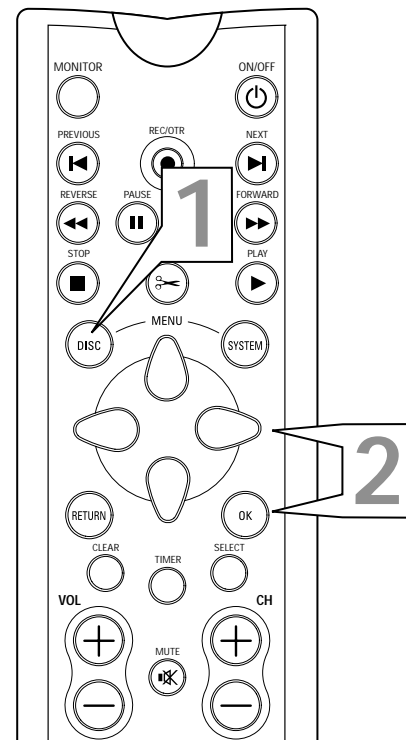
DVD+R

DVD

Title/Disc menus

- 1 Press DISC MENU during Disc playback.**
For a DVD, if the current Title has a menu, the Title menu will appear on the screen. Otherwise, the Disc menu will appear. The menu may list language and subtitle options, Chapters, or other features.
For a DVD+RW or DVD+R, the Index Picture Screen will appear.
Details are on page 35.

- 2 Press ▼▲◀▶ to select items in the menu or Index Picture Screen, then press OK.** Repeat this process until you set up all the features you want or until playback begins.



DVD+RW

DVD+R

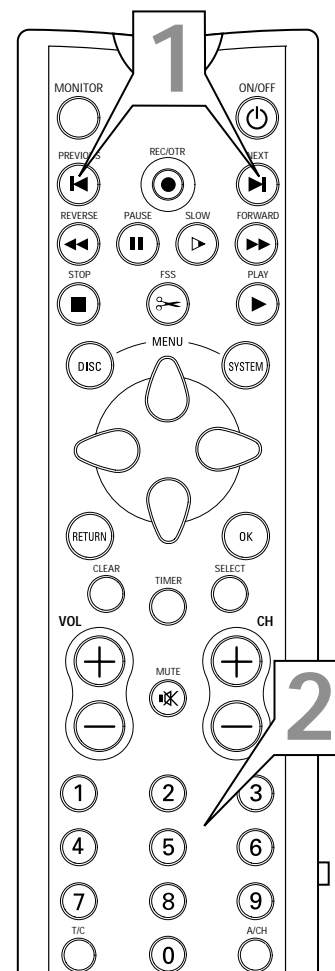
DVD

AUDIO CD

VIDEO CD

Chapter/Track Selection

- 1 Press NEXT ▶| during playback to go to the next Track/Chapter. Press PREVIOUS |◀ once to return to the beginning of the current Track/Chapter. Press PREVIOUS |◀ repeatedly to step back to previous Tracks/Chapters.**
- 2 To go directly to any Track/Chapter during playback, press the Number buttons to enter the Track/Chapter number.**
If you enter an invalid number, an "X" may appear in the top left corner of the TV screen. The current Track/Chapter will continue to play. Or, an incorrect Track/Chapter may begin to play. Make sure the Track/Chapter number you enter is available on the Disc. Make sure the Chapter is available within the current Title. The Menu Bar will disappear automatically in a few seconds.

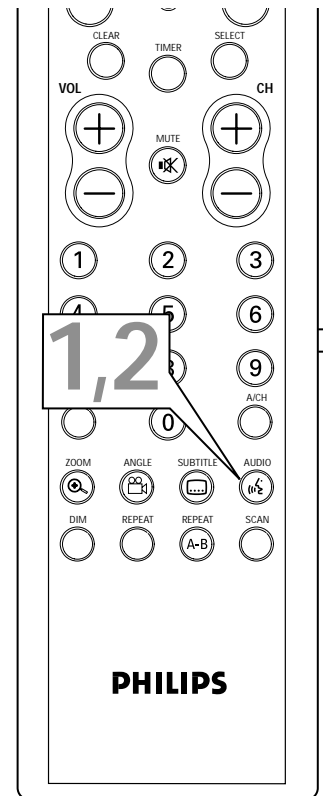
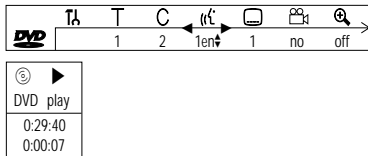


DVD

Audio Language

Some DVDs are recorded in different languages. For example, you may be able to watch the same movie in French, Spanish, etc. The movie may have special audio features, such as a director's commentary or music soundtrack. If these are available on the DVD, access the different languages or featured soundtracks by following these steps.

- 1** During DVD playback, press the **AUDIO** (🔊) button. (🔊 Audio will be selected in the Menu Bar.
- 2** Within five seconds, press the **AUDIO** (🔊) button repeatedly to see the different languages available. Or, press **▲** or **▼** repeatedly to see the different languages. The language you select will be audible in a few seconds. The Menu Bar will disappear automatically in a few seconds.
The languages or options may be abbreviated. For example, French may be Fr. See your Disc case for details on available audio features and explanations.



DVD+RW

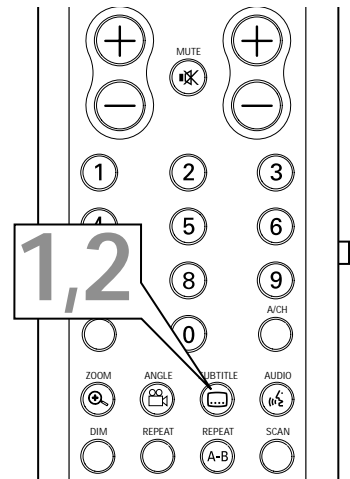
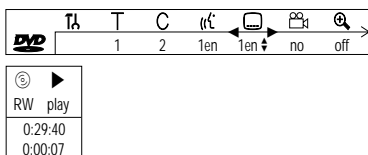
DVD+R

DVD

Subtitles

Some DVDs include subtitles in different languages. Or, material you recorded onto a DVD+RW or DVD+R might include subtitles. To choose subtitles, follow these steps.

- 1** During playback, press the **SUBTITLE** (☰) button. (☰ Subtitle) will be selected in the Menu Bar.
- 2** Within five seconds, press the **SUBTITLE** (☰) button repeatedly to see the different subtitle languages. Or, press **▲▼** to see the different subtitle languages. Subtitles will appear after a few seconds. The Menu Bar will disappear automatically in a few seconds.
You can choose subtitles only if they are available on the Disc.



Helpful Hint

- If you record from a digital camcorder using the DV i-LINK jack on the front of the Recorder, the Recorder will store the recording date and time as a subtitle. Press the **SUBTITLE** (☰) button to see the recording date and time in the bottom right corner of the TV screen during playback.

30 Zoom, Camera Angle

DVD+RW



DVD+R

DVD

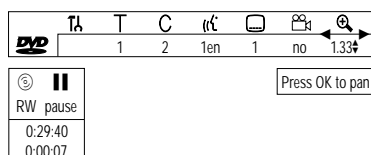
VIDEO CD

Zoom

Zooming lets you enlarge the video image during playback and pan through the enlarged image.

1 Press **ZOOM**  during Disc playback.  Zoom will be selected in the Menu Bar.

2 Within five seconds, press **▲** or **▼** to choose 1.33, 2 or 4. Playback will pause, and the still picture will appear at 1.33, 2, or 4 times the normal size.

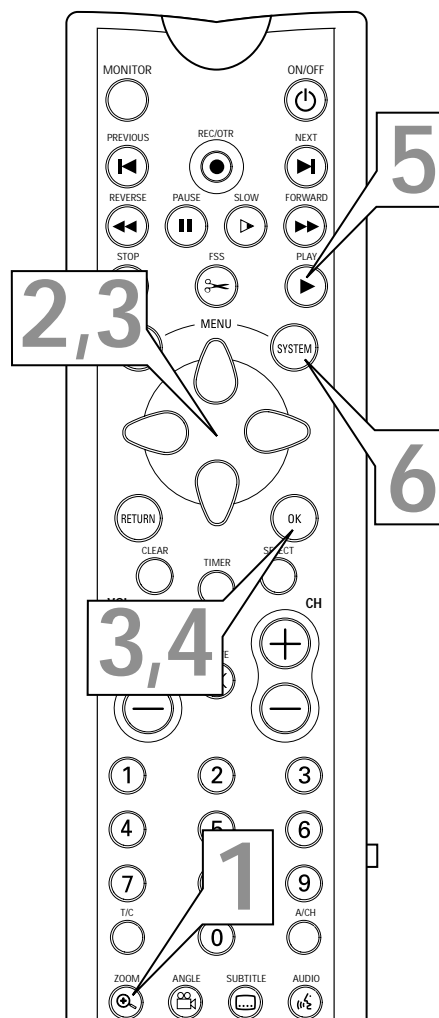


3 To move the enlarged picture around on the TV screen, or "pan," press **OK**. Then, press **▼ ▲ ◀ ▶** to move the picture.

4 Press **OK** again to see the still, zoomed picture without the Menu Bar.

5 To return to regular playback, press **PLAY ▶**.

6 Press **SYSTEM MENU** to remove the Menu Bar again.



DVD

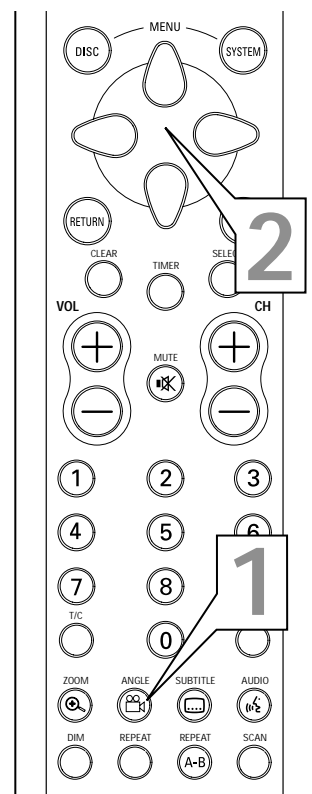
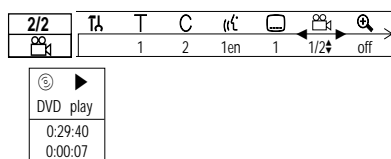
Camera Angle

Some DVDs include scenes recorded from different angles. To watch segments from a different angle, follow these steps.

1 During DVD playback, press the **ANGLE** button. Angle will be selected in the Menu Bar.


2 Within five seconds, press **▲▼** to select a different angle. In a few seconds, playback changes to the selected angle.

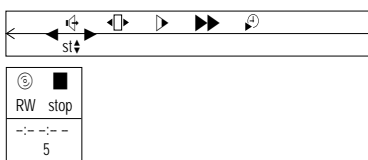
- Or, if the Angle symbol appears in the top left corner of the TV screen during playback, multiple angles are available. Simply press **▲▼** to switch among the different angles.



Sound

Choose a sound setting based on the capabilities of the equipment to which you connected the DVD Recorder. *Details are on pages 9-14 and 57.*

- 1 Press **SYSTEM MENU**.
- 2 Press **►** repeatedly to select .
- 3 Press **▲▼** to select **st (stereo)**, **sur (Dolby Surround)**, or **3d**.
 - Select **st (stereo)** to hear stereo sound. This will work with any type of equipment that has right and left audio jacks (usually red and white).
 - Select **sur (Dolby Surround)** if your audio equipment is compatible with Dolby Surround. If it is, usually a Dolby Pro Logic logo will appear on the equipment.
 - Select **3d** if you want to enjoy surround sound but your equipment is not Dolby Pro Logic compatible.




- 4 Press **SYSTEM MENU** to remove the Menu Bar.

DVD+RW DVD+R DVD VIDEO CD

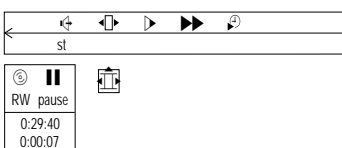
Still Picture/Frame-by-frame Playback

To quickly pause playback, press **PAUSE ■■** on the remote control during playback. To advance the still picture one frame at a time, press **PAUSE ■■** repeatedly. To resume play, press **PLAY ►**.

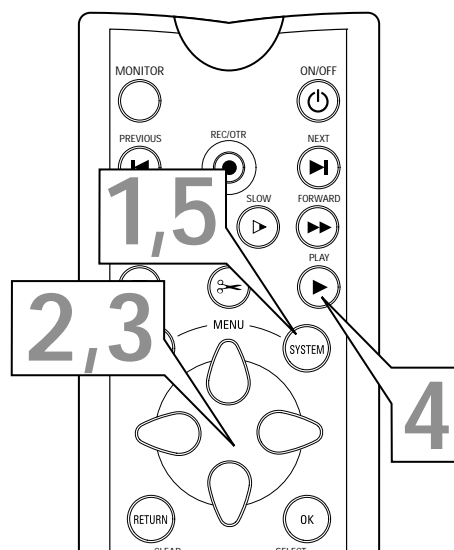
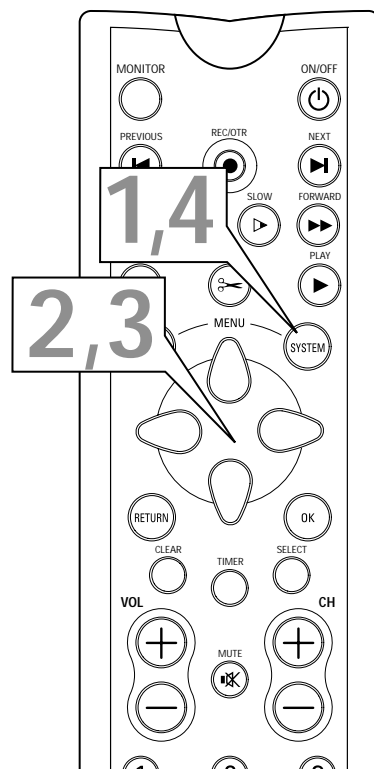
Or, to freeze the picture during Disc playback using the Menu Bar, follow the steps below.

- 1 Press **SYSTEM MENU** during playback.
- 2 Press **►** repeatedly to select .
- 3 Press **▼** to freeze the picture, then press **◀▶** to move the picture backward or forward one frame at a time.

Do not leave a still picture on your TV more than five minutes. This may etch the image onto your screen permanently. Other still visual elements, such as TV station logos or video games, also will damage your TV screen if left too long.



- 4 Press **PLAY ►** to resume regular playback.
- 5 Press **SYSTEM MENU** to remove the Menu Bar.



Helpful Hint

- The Recorder also refers to Sound settings as Analog output. This means the sound the Recorder sends to your audio equipment (stereo or TV) is analog, or two-channel, left and right. You know you are using analog sound because you used the red and white, left and right, Audio jacks in your connections. Details are on page 57. Whether you adjust the sound settings here or as described on page 57, the results will be the same.

32 Slow Motion, Forward and Reverse Searching

DVD+RW

DVD+R

DVD

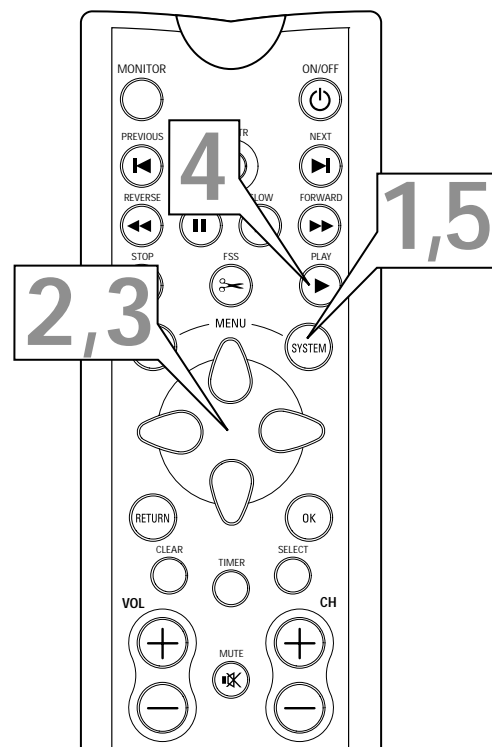
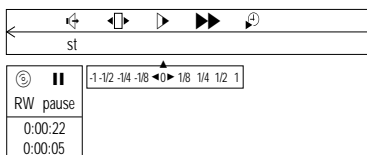
VIDEO CD

Slow Motion

Start slow motion playback simply by pressing the SLOW ► button during playback. Press SLOW ► repeatedly to play the Disc at 1/2, 1/4, or 1/8 the regular speed. Press PLAY ► to resume regular playback.

Or, to use the Menu Bar for slow motion, follow the steps below.

- 1 During Disc playback, press SYSTEM MENU.
- 2 Press ► repeatedly to select ► (Slow motion), then press ▼. Playback will pause.
- 3 Press ◀▶ to select the required speed: -1, -1/2, -1/4 or -1/8 (backward), or 1/8, 1/4, 1/2 or 1 (forward). The Disc will start to play at the speed you selected, for example, one-half as fast as normal (1/2).
Select 1 to play the Disc at normal speed again. Select 0 or press PAUSE ■■ on the remote control to pause the picture.



- 4 To return to normal playback, press PLAY ►.
- 5 Press SYSTEM MENU to remove the Menu Bar.

DVD+RW

DVD+R

DVD

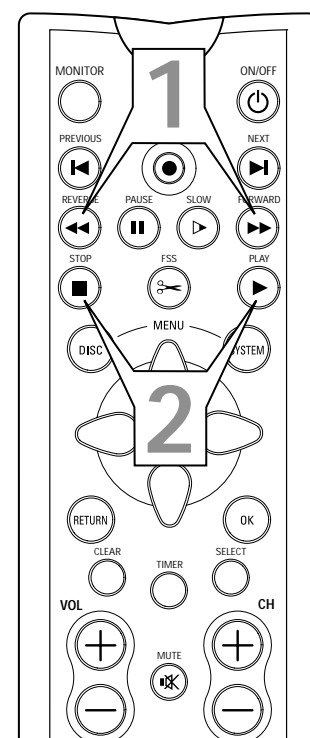
VIDEO CD

AUDIO CD

Forward and Reverse Searching

- 1 To search a DVD, Video CD, DVD+R, or DVD+RW at four times the normal speed, press FORWARD ►► or REVERSE ◀◀ during playback. To search at 32 times the normal speed, press FORWARD ►► or REVERSE ◀◀ again. The sound will be mute.
On an Audio CD, to search the Disc at four times the normal speed, press FORWARD ►► or REVERSE ◀◀ during playback. Sound will be muted partially. To search at eight times the normal speed, press FORWARD ►► or REVERSE ◀◀ again. The sound will be mute.
Each press of FORWARD ►► or REVERSE ◀◀ switches between the slower and faster search speed.

- 2 Press PLAY ► to resume playback or press STOP ■ to stop playback.



DVD+RW

DVD+R

DVD

VIDEO CD

Time Search

Time Search lets you choose a specific elapsed playing time at which you want to begin playback. This feature may not be available on all Discs.

- 1 Press **SYSTEM MENU** during Disc playback.
- 2 Press **▶** repeatedly to select **④**.
- 3 Press **▼**. Playback will pause. A time edit box will appear, showing the elapsed playing time of the current Chapter or Disc.

The diagram shows a DVD player's display. At the top, there is a progress bar with a playhead and a 'st' label. Below it, a 'time edit box' shows '0:02:32'. To the left, a 'Status box' displays 'DVD pause', '0:05:26', and '0:02:32'.
- 4 Press the **Number** buttons to enter the time at which you want playback to begin. Enter the hour, minutes, and seconds from left to right in the box. The time must be within the possible time of the current Chapter or Disc. If it is not, play will not begin after you press OK at step 5. Instead, a space in the time edit box will blink. Or, playback may begin at the wrong time. Refer to the Status box to see the time available, then enter a correct time.
- 5 Press **OK**. After a few seconds, playback will resume at the point you selected.
- 6 Press **SYSTEM MENU** to remove the Menu Bar.

DVD+RW

DVD+R

DVD

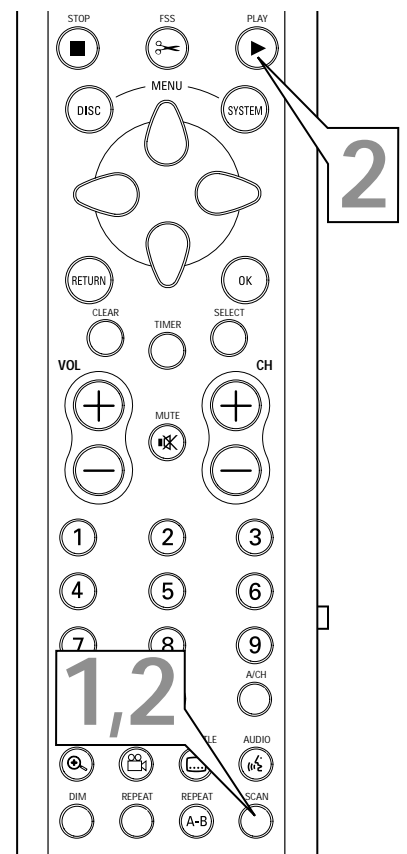
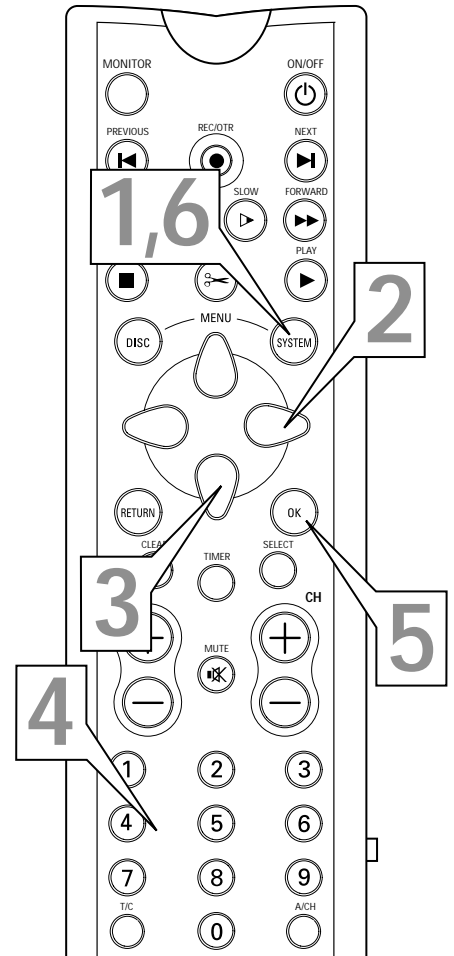
VIDEO CD

AUDIO CD

Scan

Scanning plays the first 10 seconds of each Chapter/Track on the Disc.

- 1 Press **SCAN** during playback. Starting at the beginning of the current Chapter/Track, the first 10 seconds of each Chapter/Track will play. This will continue until the end of the Disc is reached or you resume regular playback.
- 2 To continue regular playback from a Chapter/Track, press **SCAN** again or press **PLAY ▶**.



34 Repeat, Repeat A-B

DVD+RW

DVD+R

DVD

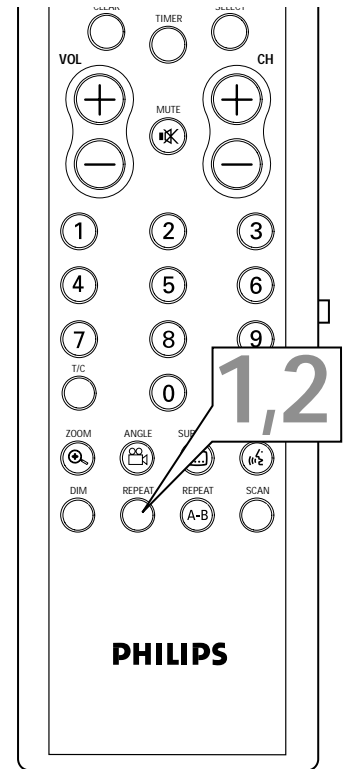
VIDEO CD

AUDIO CD

Repeat

You may play a Chapter, Track, Title or entire Disc repeatedly. All Discs may not allow all the repeat options. Check your Disc for details.

- 1** During Disc playback, press **REPEAT** repeatedly to choose a **Repeat option**. Depending on the type of Disc, you may choose to play the Chapter, Track, Title, or Disc repeatedly. During DVD, Video CD, DVD+R, or DVD+RW playback, the repeat symbols will appear briefly on the TV screen. *Details are on page 26.* On a DVD+RW or DVD+R, the entire Disc will play repeatedly only if the Disc is full of recordings.
- 2** To cancel repeat playback, repeatedly press **REPEAT** until all the repeat symbols or messages disappear from the screen.



DVD+RW

DVD+R

DVD

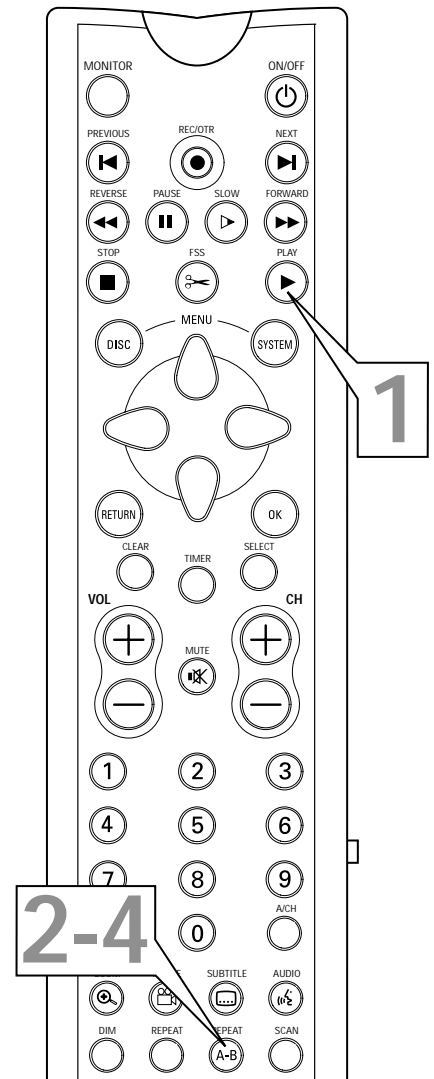
VIDEO CD

AUDIO CD

Repeat A-B

You also may set the DVD Recorder to play only a specific portion of a Title, Chapter, or Track repeatedly. Follow these steps.

- 1** Press **PLAY** ► to start Disc playback.
- 2** When the Disc reaches the point at which you want repeated playback to begin, press **REPEAT A-B**.
- 3** When the Disc reaches the point at which you want to end the segment, press **REPEAT A-B** again. The segment will begin playing repeatedly.
- 4** To resume regular playback, press **REPEAT A-B** again. Regular playback will resume from the current point.



The Index Picture Screen shows your recordings on a DVD+RW or DVD+R. It appears automatically when you insert a DVD+R or DVD+RW or when you stop playback or recording. A DVD+RW or DVD+R must be in the Recorder and contain recordings.

An Index Picture represents each recording. Next to the Index Picture is the program name, length of recording, recording mode/speed, and date of recording. If the recording has no name, the recording source and time will appear instead (for example, the recorded channel and the time at which you started recording the channel).

Empty disc areas (erased Titles or blank space at the end of the Disc) also appear in the Index Picture Screen. "Empty title" and the amount of remaining recording time appear beside the empty Index Picture box.

The Index Picture Screen will dim after several minutes of no use. This prevents damage to your TV screen. To brighten the Index Picture Screen again, use the DVD Recorder or its remote control to access the regular features of the Index Picture Screen.

Titles

A maximum of three Index Pictures appears on the screen at once. Press ▲▼ to move to additional recordings, if available.

Press STOP ■ briefly to move directly to the first recording on the Disc. Press and hold NEXT ► for a couple of seconds to move quickly to the last recording on the Disc or to the last Empty Title.

Disc Bar

The Disc Bar appears at the right of the Index Picture Screen. This overviews all recordings on the Disc, as well as any empty spaces.

On the Disc Bar, the Disc Pointer indicates your current position on the Disc. Moving through the recordings by pressing ▲▼ moves the Disc Pointer. On a DVD+RW, resume playback or recording from this point by pressing OK for playback or REC/OTR for recording. Later recordings will be over-written. On a DVD+R, resume playback from the Disc Pointer location by pressing OK. However, on a DVD+R, recording automatically begins at the last empty title space when you press REC/OTR.

Title Settings Menu

When you select an Index Picture, press ► to go to the Title Settings menu for that recording. Here, you can edit the current Title name, play the entire Title, or erase the selected Title.

Details are on page 44.

Title description

Includes program name (or channel/source and time at which it was recorded), length of recording, the speed in which it was recorded, and the date of recording (if clock was set).

Cue

Go to Disc Information Screen or to Title on previous screen. *Disc Information Screen details are on page 47.*

Index Picture

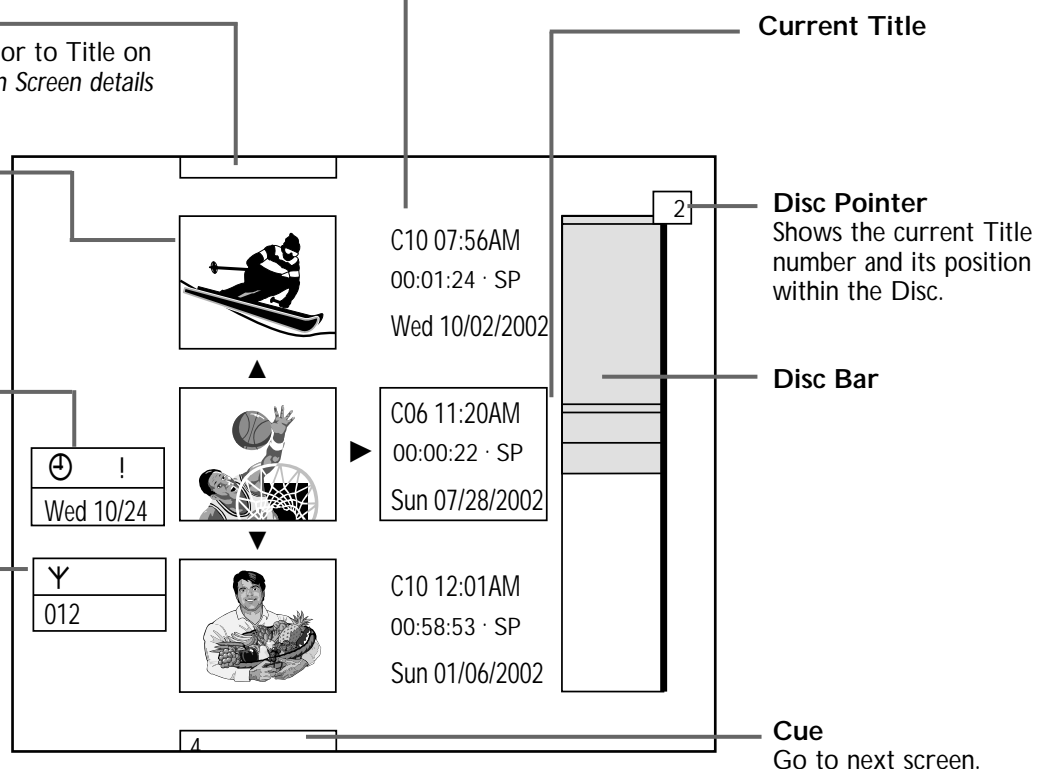
An image representing a recording. An empty box represents an area on the Disc that is empty and available for recording. *To personalize the Index Picture, see page 48.*

Timer Information Box

Displays the current time or the time/date of the next scheduled timer recording. *Details are on page 27.*

Tuner Information Box

Displays the currently selected TV channel or video source (if additional equipment is connected to the DVD Recorder). *Details are on page 27.*

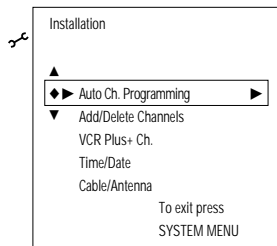


36 Installation: Automatic Channel Programming

Although the DVD Recorder selects available TV channels during Initial Setup, you may want to repeat the process later if more channels become available in your area. This will erase and replace all previously stored channels. To update the available channels, follow these steps.

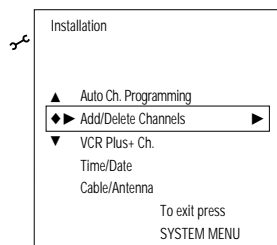
1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.

2 Press repeatedly to select , then press to enter the Installation menu.

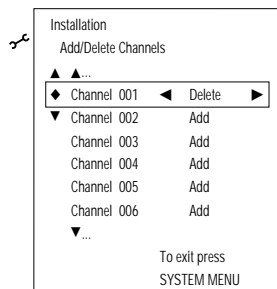


3 Press to select **Auto Ch. Programming**, then press **OK**. "Searching for TV channels" will appear, along with a scale showing channels that are being memorized. The number of channels found will show on the screen as the searching progresses. This will take a few minutes, depending on the number of channels available.

4 When the channel search finishes, "Auto ch. search complete" will appear, along with the total number of channels found. Press **SYSTEM MENU**. The Installation menu will reappear. If you are satisfied with the channels found, press **SYSTEM MENU** again to remove the menu. You are finished. To add or delete additional channels, press to select **Add/Delete Channels**, then go to step 5.

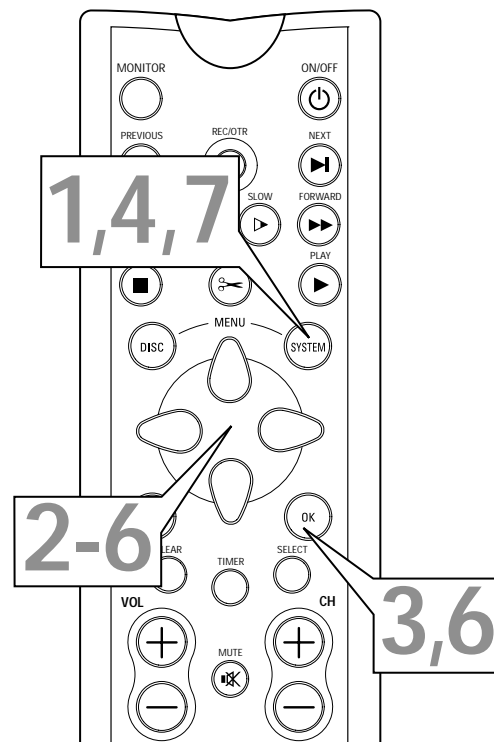


5 Press . A channel list will appear. Beside each channel number, you will see "Delete" or "Add."



6 Press to select the channel number you want to add or delete, then press to choose Add or Delete for that channel. Press **OK** to store your choice. Repeat step 6 as often as necessary to add or delete all the channels you want.

7 Press **SYSTEM MENU** repeatedly to remove all the menus when you are finished.



Helpful Hints

- Added channels will be accessible in Monitor mode when you press CH +/- . Deleted channels will be skipped when you press CH +/- . Delete channels you rarely watch; this will quicken channel changing when you use CH +/- . You still can select deleted channels with the Number buttons.
- If new channels become available, or if you receive a channel the Recorder did not add during setup, add the channel.
- The Recorder detects whether you connected an Antenna or Cable TV signal. If you connected a Cable TV signal but are receiving limited channels, reset your channels. Follow steps 1-2 above. Then, press or to choose Cable/Antenna, then press **OK**. Press or to choose Cable or Anten. (antenna) (based on your connection) or Auto (if you want the Recorder to keep detecting the signal). Press **OK**, then press **SYSTEM MENU**. Press **OK** again to have the Recorder reset the channels. When the channel search ends, press **SYSTEM MENU** repeatedly to clear the screen.

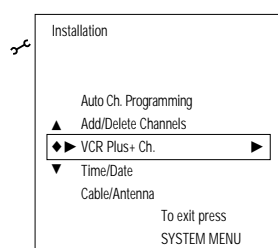
If you intend to use the VCR Plus+ programming system, program the DVD Recorder with your local channel information. This will only take a few minutes. Since the channel numbers of the stations you receive may not be the same as the station numbers, and since channel numbers differ from area to area, you must set up channels in order for the system to work efficiently.

Before you begin, make sure you have 1) a cable TV channel list, if applicable (you can request one from your cable TV company), and 2) a chart that lists VCR Plus+ channel numbers, which you can find in your TV guide or the TV listings of your local newspaper.

1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.

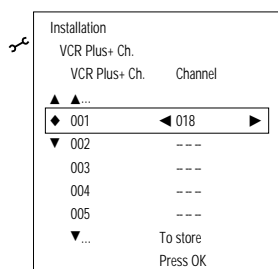
2 Press repeatedly to select , then press to enter the Installation menu.

3 Press to select **VCR Plus+ Ch. (channel)**, then press .



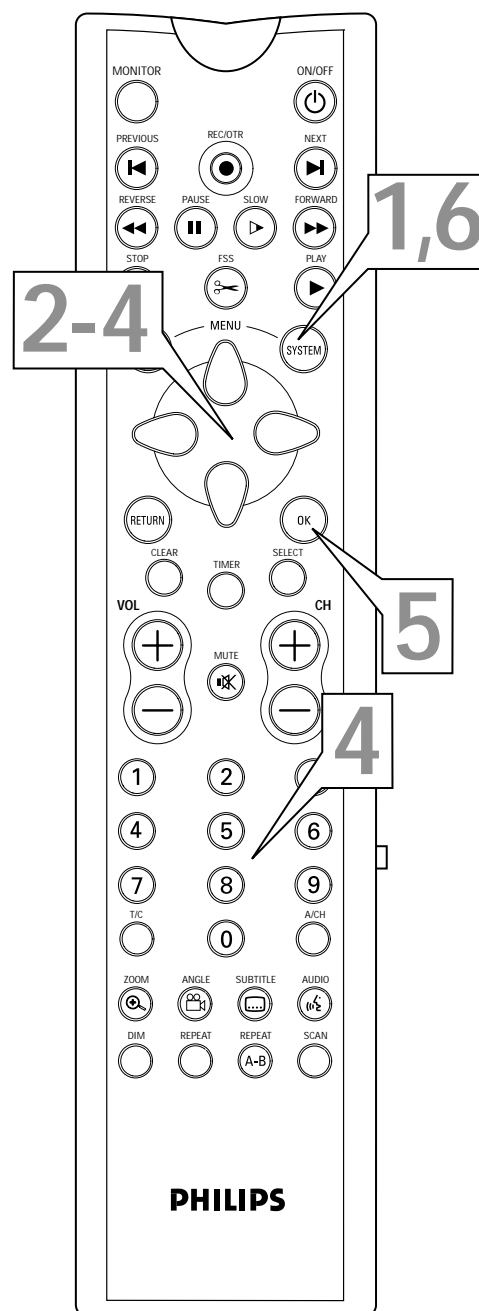
4 Press to select a **VCR Plus+ Ch. number**, then press the **Number buttons** or to enter the corresponding **Channel number from your TV guide list**. If you use the Number buttons, enter the channel number as a three-digit number. For example, for channel 18, press 0,1,8.

Refer to the list from your local newspaper or TV guide for the VCR Plus+ channels and corresponding TV channel numbers for your area. These are the numbers you will enter as the Channel number as you complete the chart on the screen.



5 Press **OK** to store the **Channel number**. Repeat steps 4-5 as often as necessary to complete the chart.

6 When you are finished, press **SYSTEM MENU** repeatedly to remove all the menus.



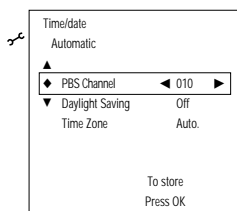
38 Installation: Clock Setting

Time/Date Automatic

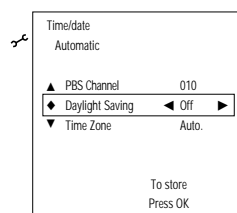
The Recorder can set the time and date automatically by referring to your local PBS station. If the Recorder chooses an incorrect PBS channel or sets the time/date incorrectly, you can set the information manually. *Details are on page 39.*

Before you begin, make sure TV channels are set. *Details are on page 36.*

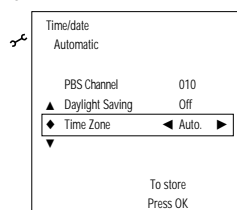
- 1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.
- 2 Press repeatedly to select , then press to enter the Installation menu.
- 3 Press repeatedly to select **Time/Date**, then press .
- 4 Press to choose **Automatic**, then press .
- 5 With **PBS Channel** selected, press to choose the channel number of your PBS station, then press **OK**. The menu will pause while the setting is stored.
If you do not know your PBS channel number, choose **Auto**. The Recorder will choose the correct PBS station for you and set the time.
If you want to set the clock manually, choose **Off**. The Recorder will not update the time automatically according to a PBS station.



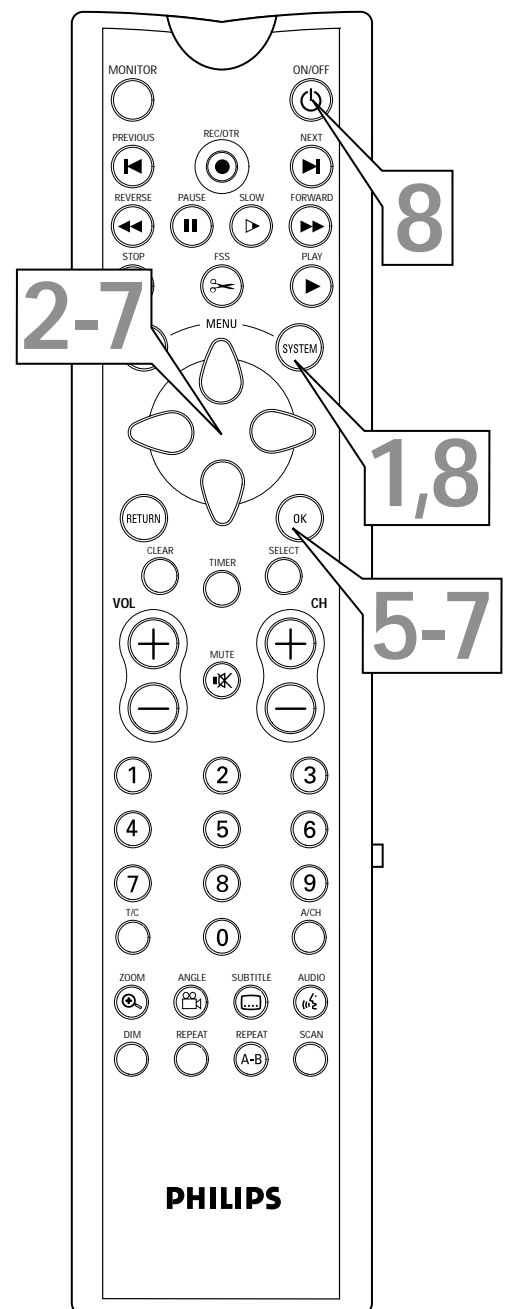
- 6 Press to choose **Daylight Saving**. Press to choose **On**, **Off**, or **Auto**, then press **OK**. The menu will pause while the setting is stored. Choose **Auto** if you want the clock set according to the PBS station's Daylight Savings Time schedule.



- 7 Press to choose **Time Zone**. Press repeatedly to choose your time zone, then press **OK**.
If you want the Recorder to use the time zone from which your PBS station broadcasts, choose **Auto**. If your PBS station broadcasts from a different time zone than the one in which you live, be sure to select your time zone. The menu will pause while the setting is stored.



- 8 Press **SYSTEM MENU** repeatedly to remove the menus, then press **ON/OFF** to turn off the Recorder. After a few minutes, the correct time will appear on the Recorder's display.
If the Recorder cannot find the time through a PBS channel, you may see an error message when you turn on the Recorder. Check the PBS channel and try again. Or, set the clock manually; *details are on page 39.*



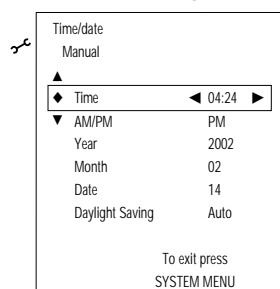
Helpful Hints

- The Recorder may set the clock automatically after you complete Initial Setup. If the correct time appears on the display, you do not need to set the clock as described on this page.
- The factory default setting of Daylight Saving is On.
- The Recorder can use the PBS channel to set the clock only if the PBS channel is one of the memorized channels. To set up or memorize channels, see page 36.

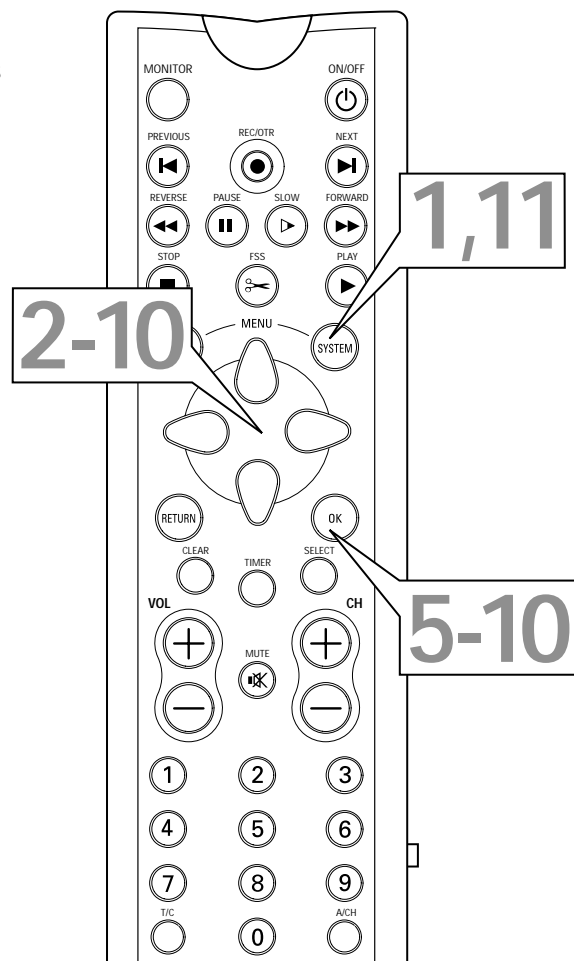
Time/Date Manual

If the Recorder does not set the time and date correctly using the Time/Date Automatic feature, set the clock manually by following the steps below. Manual clock setting overrides Automatic clock setting.

- 1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.
- 2 Press repeatedly to select , then press to enter the Installation menu.
- 3 Press repeatedly to select **Time/Date**, then press .
- 4 Press to choose **Manual**, then press . When you choose Manual clock setting, PBS Channel changes to Off automatically. Details are on page 38.



- 5 Time will be highlighted. Press to choose the correct time in hours and minutes, then press **OK**. Or, press the Number buttons to quickly enter the time in hours and minutes, then press **OK**. The menu will pause while the setting is stored.
- 6 Press to choose **AM/PM**, then press to choose **AM** or **PM**. Press **OK**. The menu will pause while the setting is stored.
- 7 Press to choose **Year**, then press to choose the current year. Press **OK**. The menu will pause while the setting is stored.
- 8 Press to choose **Month**, then press to choose the current month. Press **OK**. The menu will pause while the setting is stored.
- 9 Press to choose **Date**, then press to choose the current date. Press **OK**. The menu will pause while the setting is stored.
- 10 Press to choose **Daylight Saving**, then press to choose **On**, **Off**, or **Auto**. Press **OK**. The menu will pause while the setting is stored.
- 11 Press **SYSTEM MENU** repeatedly to remove all menus.



Helpful Hints

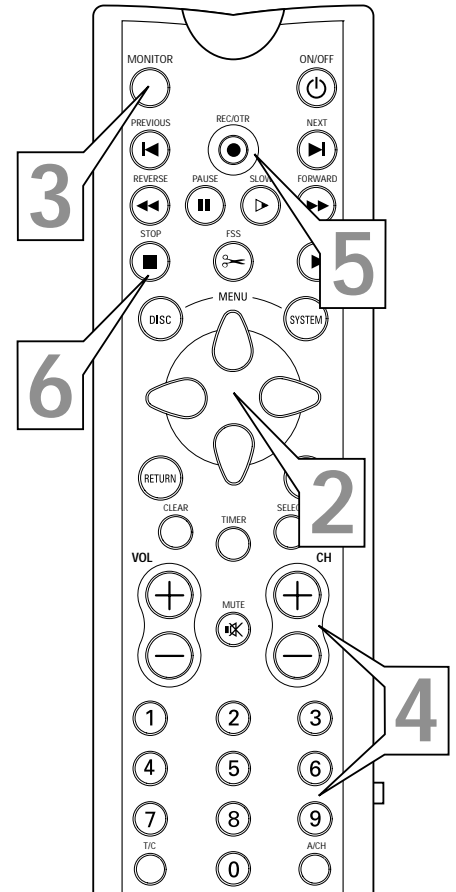
- In order for the clock to remain set as you specified manually, you may need to set Daylight Saving to Off.
- If you set up channels again as described on page 36, you may need to reset your clock.
- If you change any item manually (Time, AM/PM, Year, Month, Date, Daylight Saving), PBS Channel will change to Off automatically. Details are on page 38.

40 One-Touch Recording

DVD+RW

DVD+R

- 1** Insert a recordable DVD+RW or DVD+R into the Recorder.
- 2** In the Index Picture Screen of a DVD+RW, press ▲▼ to select an **Empty Title** (or empty Index Picture box) on the Disc that has enough time for the recording. Or, select the place at which you want to start the new recording in order to overwrite other recordings. *Details are on page 35.*
You may skip this step if you use Safe Record. See step 5.
Or, if you are using a DVD+R, you may skip this step. Recordings on a DVD+R are made at the end of the Disc automatically. Previous recordings are not overwritten.
- 3** Press **MONITOR** to see TV channels through the DVD Recorder. Make sure you have programmed channels. *Details are on page 36.*
- 4** Press **CH+**, **CH-**, or the **Number** buttons to select the channel you wish to record.
If you are using a Cable Box/Satellite Receiver that has a single RF Out/TV Out/Antenna Out/75 ohm jack, set the DVD Recorder to channel 3 or 4 in Monitor mode. (Choose the output channel of your Cable Box/Satellite Receiver.)
If your Cable Box/Satellite Receiver has Audio/Video Out jacks, set the Recorder to an EXT channel. Choose the EXT channel that corresponds to the jacks you used on the rear of the DVD Recorder (the jacks to which you connected the Cable Box/Satellite Receiver). Then, change TV channels at the Cable Box/Satellite Receiver. You cannot change channels during recording. You can only record the channel you are watching. You cannot record one channel while watching a different TV channel.
- 5** Press **REC/OTR** twice to start a 30-minute recording. Press **REC/OTR** repeatedly to record longer timed recordings, up to four hours long in thirty-minute increments. The length of recording available depends on the current recording mode/speed and the amount of time available on the Disc. *Recording mode/speed details are on page 46.* Recording will begin about 30 seconds after you press REC/OTR. (The Disc takes this time to prepare for recording.)
Or, use Safe Record to have the DVD Recorder automatically find the empty space at the end of a DVD+RW; this prevents overwriting other recordings. To do so, press and hold REC/OTR for about two seconds, or until SAFE RECORD appears on the Recorder's display panel. Then, press REC/OTR repeatedly to choose the time length you want for your recording.
If you press REC/OTR only once, or press and hold REC/OTR one time and immediately start Safe Record, the Recorder will record the current channel or source until the end of the Disc is reached. The Recorder will turn off automatically.
- 6** Press **STOP** ■ if you need to stop the recording before the designated end time. Otherwise, the Recorder will automatically stop recording at the designated end time and turn itself off.



Helpful Hints

- "DISC LOCKED" will appear on the TV screen if a protected DVD+RW or DVD+R is in the Recorder.
- If the power fails during recording, the Index Picture Screen may not match the actual video content on the Disc. The last recorded Title may be lost. A power failure or unit failure/system crash also may destroy all the material recorded on a Disc.
- If no free space remains on the Disc, END OF DISC will appear. Recording is not possible.
- Press SYSTEM MENU during recording to access or remove the Status box, Tuner Information box, and/or Timer Information box. Details are on pages 26-27.
- The recommended operating temperature range for the Recorder is from 32°F-122°F (Fahrenheit) for DVD+RW recording and 32°F-104°F for DVD+R recording. Exceeding these ranges may cause unstable recording results.

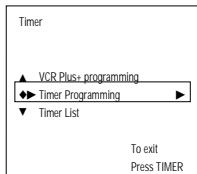
- If you plan to play a DVD+R on another DVD Player, finalize the Disc. Follow the steps on page 47, choosing "Finalize Disc" at step 4.
- To edit your recordings, see page 48. However, editing changes may not be accessible when you play the Disc on other DVD Players.
- To erase a recording, see "Erase this title" details on page 44.

DVD+RW

DVD+R

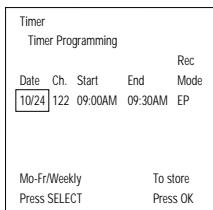
1 Press **TIMER** on the remote control.

2 Press **▲▼** to select **Timer Programming**, then press **►**.

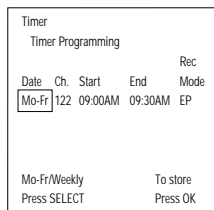


3 Date will be selected. Press **▲▼** to enter the month and date you want the recording to start.

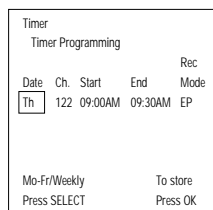
Press **SELECT** repeatedly to choose: the date (timer recording will occur once on the day you choose); **Mo-Fr** (timer recording will occur every weekday at the same time); or a **day of the week** (for example, Mo for Monday; timer recording will occur every Monday at the same time). Press **►**.



Press SELECT once.
Recording will happen one
time on the day you chose.



Press SELECT again.
Recording will happen every day,
Monday-Friday, starting on the
day you chose.



Press SELECT again.
Recording will happen on the same
day every week, starting the day you chose.

4 Ch. (channel) will be selected. Press **▲▼** to enter the channel you want to record, then press **►**. If you are using a Cable Box/Satellite Receiver, enter channel 3 or 4 (the output channel of your Cable Box/Satellite Receiver) or the EXT channel (that corresponds to the jacks to which you connected the Cable Box/Satellite Receiver). Set the channel you want to record at the Cable Box/Satellite Receiver. Leave it on for the recording.

5 Start will be selected. Press **▲▼** to enter the time at which you want recording to begin - in hours and minutes. Press **SELECT** repeatedly to choose **AM** or **PM**. When the start time is correct, press **►**.

6 End will be selected. Press **▲▼** to enter the time at which you want recording to stop - in hours and minutes. Press **SELECT** repeatedly to choose **AM** or **PM**. When the End time is correct, press **►**.

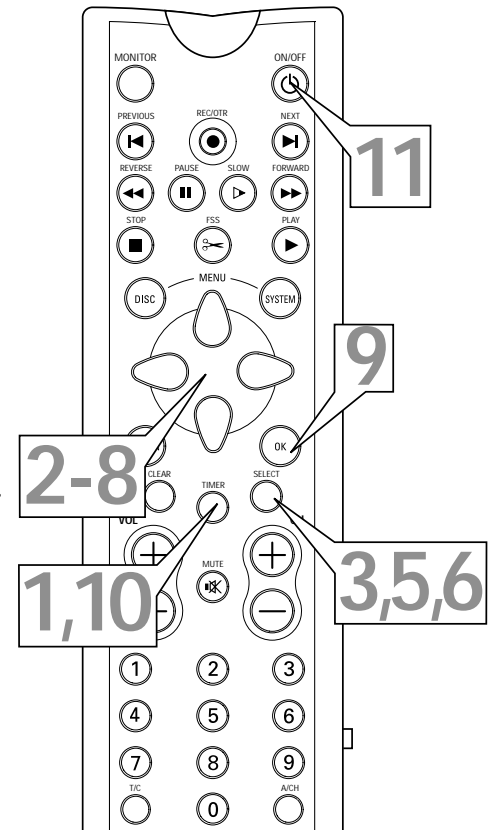
7 Rec Mode (Record Mode) will be selected. Press **▲▼** to choose the speed at which you want recording to occur: **HQ**, **SP**, **LP**, or **EP**. HQ allows a maximum of one hour of recording per Disc; SP, two hours; LP, three hours; and EP, four hours. The slower the speed, the more recording time per Disc. EP is the slowest speed. The faster the speed, the better the picture quality. HQ is the fastest speed. Details are on page 46.

8 Check your timer information. If something is incorrect, press **◀▶** to choose the incorrect information. Use **▲▼** to enter the correct data.

9 When the information is correct, press **OK**. Stored will appear at the bottom of the screen, then the Timer menu will reappear.

10 Press **TIMER** to remove the menu.

11 Put a recordable DVD+RW or DVD+R in the Recorder. Press **ON/OFF** to turn off the Recorder a few minutes before the timer recording is set to begin. The Recorder must be off in order for the timer recording to begin. For the timer recording, the DVD Recorder will turn itself on, record, then turn itself off when finished. If you plan to play a DVD+R on another DVD Player, finalize the Disc. Follow the steps on page 47, choosing "Finalize Disc" at step 4. To edit your recordings, see page 48. However, editing changes may not be accessible when you play the Disc on other DVD Players.



Helpful Hints

- Enter the Date, Channel, Start, and End information with the Number buttons. Enter channel numbers as a three-digit number. For example, for channel 15, press 0,1,5.
- Press **ON/OFF** on the remote to turn off the Recorder and stop a timer recording that is in progress.
- Use **HQ** when recording from digital sources, such as a digital camcorder.
- If you can not select **Timer Programming** at step 2, there are already six **Timer** recordings set. Delete another **Timer** recording before you try to set a new one. Details are on page 43.
- Finish setting a **Timer** recording and turn off the DVD Recorder at least five minutes before the recording will start.
- Set the timer recording one minute ahead of the program start time. This helps ensure the entire program is recorded. The Disc needs about 30 seconds to prepare for recording.
- More **Timer** recording details are on page 43.
- You cannot change channels during recording or watch one channel while recording another.

42 VCR Plus+® Timer Recording

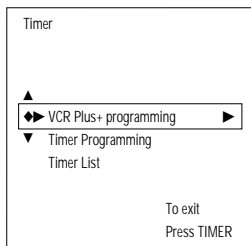
DVD+RW

DVD+R

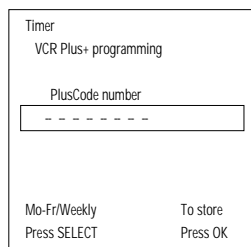
A PlusCode® number is a number of up to eight digits, printed in most TV guides next to the start time of a TV program. You can program a timer recording quickly by simply entering the code for your program. Before you begin, complete the VCR Plus+® channel setup. *Details are on page 37.*

1 Press **TIMER** on the remote control.

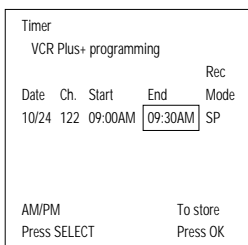
2 Press **▲▼** to select **VCR Plus+ programming**, then press **►**.



3 Press the **Number** buttons to enter the **PlusCode** number from your TV guide, then press **OK**. If you make a mistake, press **CLEAR** to erase the PlusCode number, then enter it again. Information about the timer will appear. If information is missing or not available, you may be asked to enter more information. Follow the instructions given on the screen. You may be asked to enter a channel number if you have not set up the VCR Plus+ channels as described on page 37.

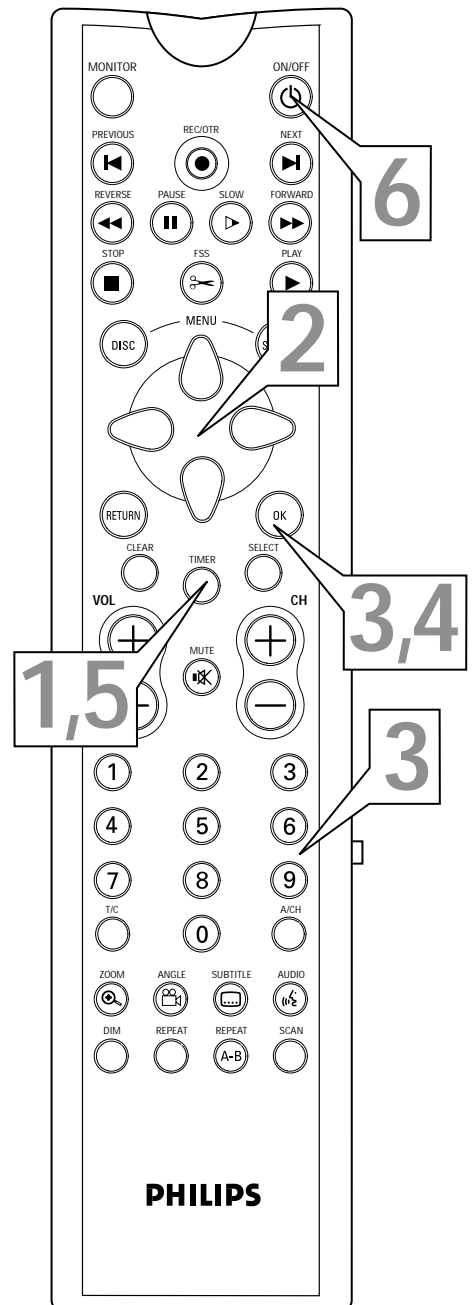


4 If the timer recording information seems correct and complete, press **OK**. Stored will appear at the bottom of the screen briefly.



5 Press **TIMER** to remove the menu.

6 Put a recordable DVD+RW or DVD+R in the Recorder. Press **ON/OFF** to turn off the Recorder at least five minutes before the timer recording is set to begin. The Recorder must be off in order for the timer recording to occur. If you plan to play a DVD+R on another DVD Player, finalize the Disc. Follow the steps on page 47, choosing "Finalize Disc" at step 4. To edit your recordings, see page 48. However, editing changes may not be accessible when you play the Disc on other DVD Players.

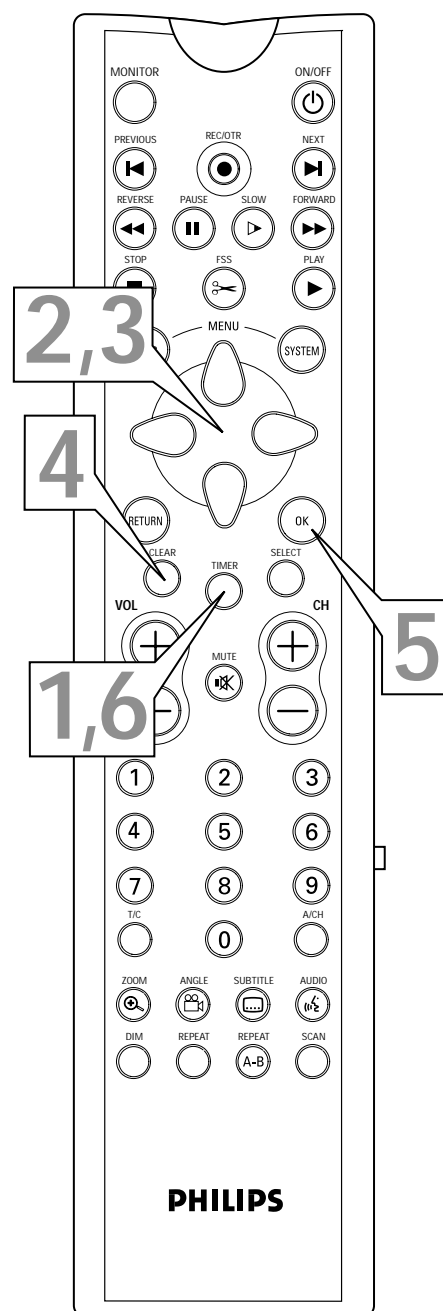


DVD+RW

DVD+R

Erasing Timer Recordings

- 1 Press **TIMER**.
- 2 Press **▲▼** to choose Timer list, then press **►**.
- 3 Press **▲▼** to highlight the timer recording you want to clear.
- 4 Press **CLEAR**. The recording you selected will appear alone on the screen.
- 5 Press **OK** to erase the timer recording. "Timer Cleared" will appear at the bottom of the screen briefly, then the Timer List will reappear. (If you decide not to erase the timer recording, press the **TIMER** button. The Timer List will reappear.)
- 6 Press **TIMER** repeatedly to remove the menus.



Error Messages

The following messages may appear while you set a timer recording.

Collision

The timer recording overlaps with another timer recording. Timer recordings that overlap or conflict with another will appear in a red highlight in the Timer List.

- To ignore the message, press **TIMER** again. The program with the earlier start time will record completely, then the remainder of the later program will record.
- Change one or both timer recordings. *Details are on page 41.*
- Delete one of the timer recordings as described above.

Please enter channel number

The VCR Plus+ programming system does not recognize the TV channel.

- Press **◀▶** to select the required VCR Plus+ channel number, then press **OK**. *Details are on page 37.*

PlusCode wrong

You entered an incorrect PlusCode number.

- Enter the correct information or press **TIMER** repeatedly to quit.

Weekend programming not possible

You entered an incorrect date or chose a daily (Mo-Fr) recording. You can only use daily programming for recordings that will occur Monday, Tuesday, Wednesday, Thursday, or Friday.

Clock not set

You can not access the Timer menu if the clock is not set. See pages 38-39 to set the clock.

Data error

Make sure all information for the timer recording is correct and complete.

Insert recordable disc

There is not a DVD+R or DVD+RW in the Recorder. Put a recordable DVD+R or DVD+RW in the disc tray before turning off the Recorder for the timer recording.

Helpful Hint

- You cannot duplicate copyrighted DVDs, videotapes, or TV broadcasts using the DVD Recorder. "COPY PROTECT" will appear on the display if you try to dub or record copyrighted material onto a DVD+R or DVD+RW using the Recorder.

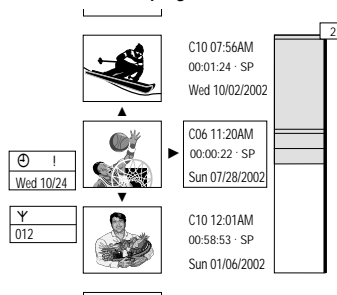
44 Title Settings Menu

DVD+RW

DVD+R

The Title Settings Menu lets you rename a Title or recording on a DVD+RW/DVD+R. From the same menu, you can play the entire selected Title or erase the chosen Title from the Disc.

- When playback is stopped and a DVD+RW or DVD+R is in the DVD Recorder, the Index Picture Screen will appear automatically. *Details are on page 35.*



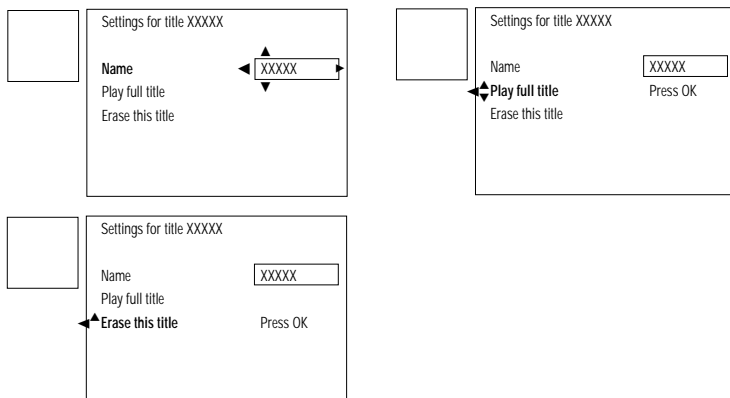
- Press **▲▼** to select the Index Picture of the recording you want to name, play, or erase, then press **►**. The Title settings menu will appear.

- Press **▲▼** to select Name, Play full title, or Erase this title, then continue as directed for each option in step 4.

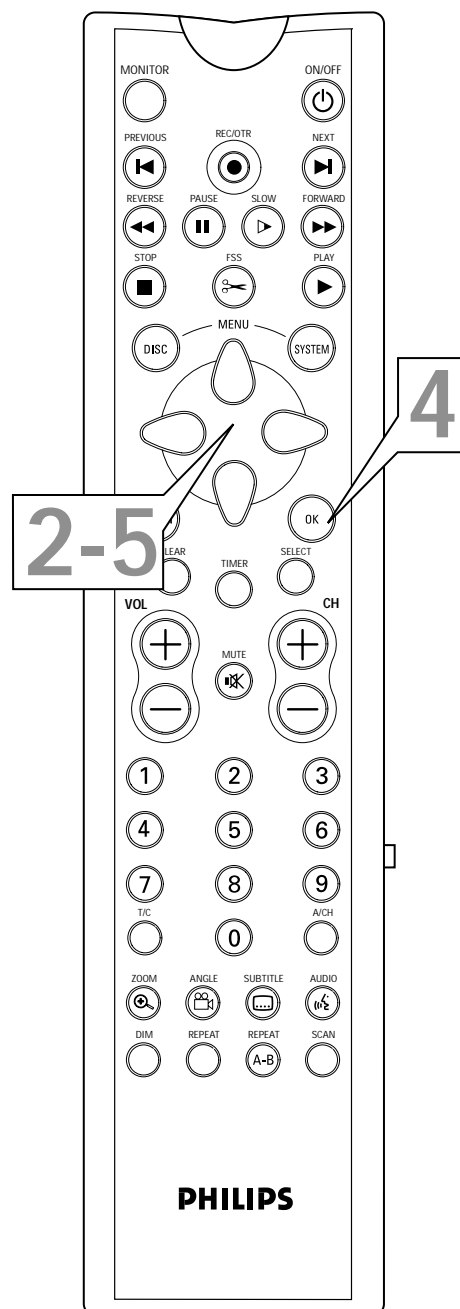
- **Name**
Press **►**. The first character of the Title name will be selected. Press **▲▼** to change the character. Press **SELECT** to switch between upper and lower case letters. Press **CLEAR** to erase a character. To move to the next or previous character, press **◀▶**. Repeat this process until you have finished naming the Title. **When the Title is complete, press OK**. Storing name will appear while the name is stored.

- **Play full title**
Press **OK**. The Disc will begin to play from the beginning of the Title you selected.

- **Erase this title**
Press **OK**. The DVD Recorder will ask you to confirm that you really want to erase the entire Title. Press **OK** again to start erasing the Title. "Erasing title" will appear during erasure. When erasing is complete, the Index Picture Screen will reappear. (If you do not want to erase the Title, press **◀** to return to the Title Settings menu instead.)



- Press **◀** to return to the Index Picture Screen if necessary.



Helpful Hint

- If you erase a Title from a DVD+R, you can not reuse the space for other recordings. "Deleted title" will appear beside an empty Index Picture box. Recordings are made at the end of a DVD+R automatically.

Manual Recording Volume, Append Recording 45

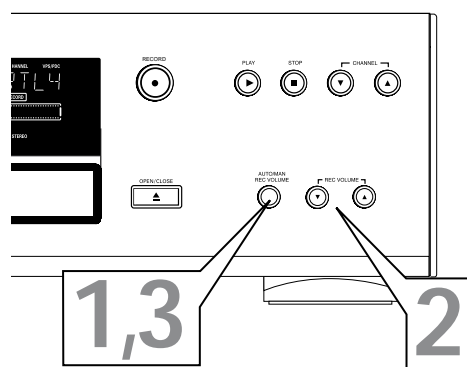
DVD+RW

DVD+R

Manual Recording Volume

You can adjust manually the volume level during recording.

- 1 During recording of a TV broadcast, press **AUTO/MAN REC VOLUME** on the front of the DVD Recorder. The display will show the current audio level. **MANUAL** appears on the display.
- 2 Press **REC VOLUME ▲▼** on the front of the DVD Recorder to adjust the volume level.
- 3 To return to automatic audio level control, press **AUTO/MAN REC VOLUME** again. **MANUAL** will disappear from the display.

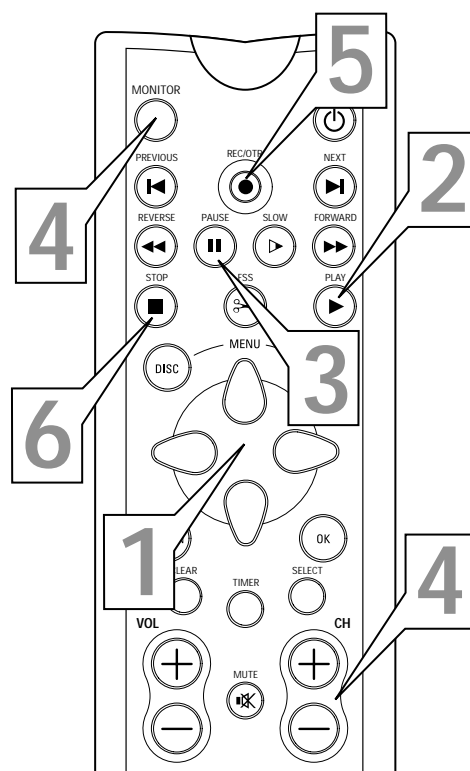


DVD+RW

Append recording

To add a new video recording to an earlier recorded Title, follow these steps. This feature is not available on DVD+Rs, which always record at the end of the Disc.

- 1 In the Index Picture Screen, press **▲▼** to select the Title to which you want to add a recording.
- 2 Press **PLAY ►**.
- 3 When you reach the point at which you want to start the new recording, press **PAUSE ■■**.
- 4 Press **MONITOR**, then press **CH+/-** to select the channel (or other equipment) you want to record.
- 5 Press **REC/OTR**. The new recording will start at the point you selected and overwrite the video material beyond this point, including later Titles.
- 6 Press **STOP ■** to stop recording.



Helpful Hint

- You can not adjust the volume manually when recording from equipment that is connected to the DV i-Link jack on the front of the Recorder. This feature is only effective when recording in Monitor mode.

46 Record Settings, Chapter Markers

DVD+RW

DVD+R

Record Settings

1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.

2 Press repeatedly to select , then press .

3 Press to select **Record mode**, **Auto chapters**, or **LP/EP rec mode**, then proceed as described in step 4.

● Record mode

4 Press to choose **SP**, **LP**, **EP**, or **HQ**, then press **OK**. "Stored" will appear briefly. Now, recordings will be made in the speed, or mode, you selected. The recording mode defines the picture quality of recordings and the maximum recording time for a Disc. You can play a Disc only in the mode in which it was recorded. See the chart below for details.

● Auto chapters

Press to choose **On** or **Off**, then press **OK**. "Stored" will appear briefly. If Auto chapters is On, the Recorder will insert a Chapter marker automatically every five to six minutes during recording. To disable this feature, select Off. You can manually insert Chapter markers after recording. *Details are on page 48.* You also may insert Chapter markers manually during recording. See Chapter Markers below.

● LP/EP rec mode (recording mode)

Press to choose **Stndrd (Standard)** or **Sport**, then press **OK**. "Stored" will appear briefly. Adjust this setting only if you chose LP or EP at Record mode as described above. (The setting has no effect when recording in HQ or SP.) When recording in LP or EP speed, select Sport to improve recording of images that move quickly. Otherwise, choose Stndrd.

5 Press **SYSTEM MENU** repeatedly to remove the menus.

Mode	Picture quality	Recording time per Disc
HQ (High Quality)	Highest quality; least recording time per Disc	One (1) hour
SP (Standard Play)	Equals quality of a pre-recorded DVD	Two (2) hours
LP (Long Play)	Equals quality of an S-VHS tape	Three (3) hours
EP (Extended Play)	Exceeds VHS tape quality; most recording time per Disc	Four (4) hours

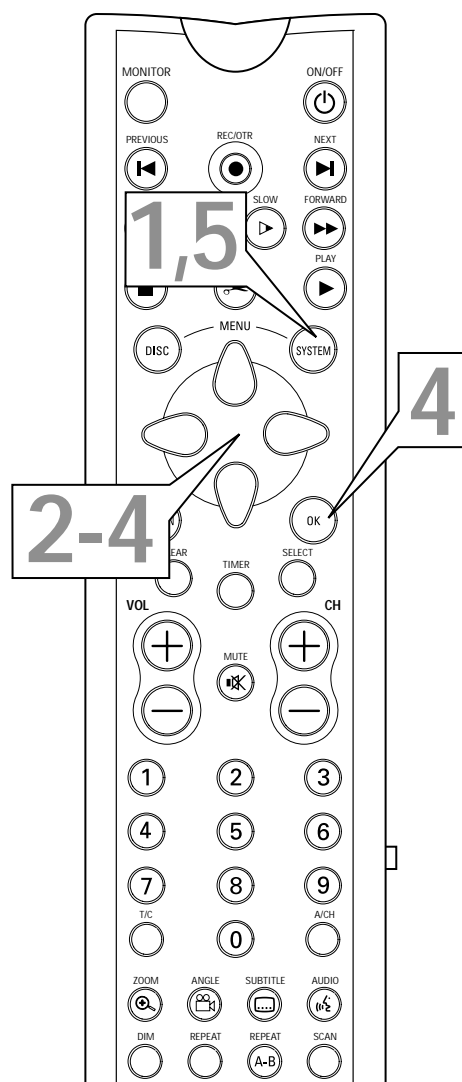
DVD+RW

DVD+R

Chapter Markers

Chapter Markers let you move easily through recordings by pressing **NEXT** or **PREVIOUS** to select the next marker during playback. This allows you to access specific points on a DVD+RW/DVD+R much as you would choose a specific Chapter for playback on a DVD.

1 Press **FSS** during recording to insert a Chapter marker at the current position. "Inserting chapter marker" will appear. The maximum number of markers varies per Disc. When the maximum number is reached, "Too many chapters" will appear. Delete some Chapter markers before inserting more. *Details are on page 48.*

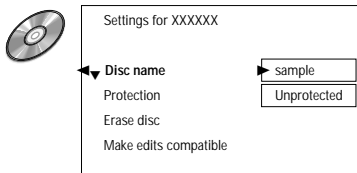


Helpful Hints

- Use HQ when recording from digital sources, such as a digital camcorder.
- You may choose a record mode simply by pressing the **SELECT** button while in Monitor mode or when viewing the Index Picture Screen. The record mode will appear at the bottom of the TV screen.
- You can not change record modes during recording.
- If you set Record mode to a low-quality speed (such as EP in order to fit more recording on a Disc), set Record mode to a high-quality speed (such as SP) after you finish recording. Leaving the Recorder set to a low-quality speed may affect the picture quality when playing DVDs later.

You can change Disc settings for a DVD+RW/DVD+R from the Disc Information Screen.

- 1 When in the Index Picture Screen, press STOP ■ to select the first Title on the DVD+RW/DVD+R.
- 2 Press ▲ to enter the Disc Information Screen.
- 3 In the Disc Information Screen, press ► to enter the Settings menu.



DVD+RW example

- 4 Press ▲▼ to select Disc name, Protection, Erase disc (DVD+RW only), Make edits compatible (DVD+RW only), or Finalize disc (DVD+R only). Proceed as follows, depending on which feature you want to adjust.

● **Disc name (DVD+RW and DVD+R)**

Press ►. Press ◀▶ to choose the character position, then press ▲▼ to enter a character. Press SELECT to alternate between capital and lower case characters. Press CLEAR to erase a character (the space will remain). Repeat this process until you enter the complete name. **To return to the Settings menu, press ◀, repeatedly if necessary.** "Storing name" will appear briefly.

● **Protection (DVD+RW and DVD+R)**

Press ►. Press ▲▼ to select Protected or Unprotected, then press OK. If you protect the Disc, you can not make any further changes to the Disc, including recording. "Disc locked" will appear on the TV screen briefly if you attempt recording. Choosing Protected also disables most editing features.

To edit or record again, select Unprotected.

Remember, Protecting a DVD+R is not the same as finalizing it. Finalization can not be undone.

● **Erase disc (DVD+RW only)**

Press OK. "This will erase all titles Press OK to confirm" will appear. Press OK again to begin erasing. (If you decide not to erase the Disc, press ◀.) "Erasing disc" appears until erasing is complete. When the Disc is erased, the Index Picture Screen will reappear, showing the free space on the Disc.

● **Make edits compatible (DVD+RW only)**

Press OK. "This will take XX" and "Press OK to confirm" will appear to indicate how long the action will take.

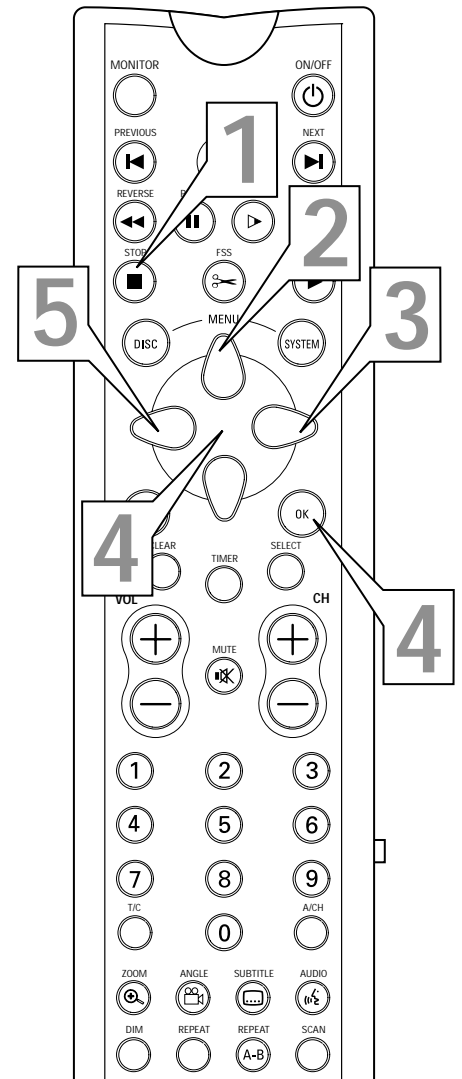
Press OK again. "Working .." and a progress percentage bar will appear until the action is complete. The Index Picture Screen will reappear when the process is complete.

● **Finalize Disc (DVD+R only, if not finalized already)**

Press OK. "Finalizing disc" will appear until finalization is complete. This may take a few minutes. Then, the Index Picture Screen will reappear. **You can not unfinalize a DVD+R, and you cannot record or edit the DVD+R after you finalize it.**

A DVD+R will play on other DVD Players only after the Disc is finalized.

- 5 If necessary, press ◀ when you are finished and want to return to the Disc Information Screen.



Helpful Hints

- For information on the Index Picture Screen, see page 35.
- Make edits compatible appears when the current DVD+RW is not compatible with other DVD Players because you have added Chapter Markers or made Chapters invisible. Details are on page 48.
- If a DVD+R was recorded on a different DVD Recorder, the settings may not be accessible.
- A disc name may contain a maximum of 64 characters.

48 Editing

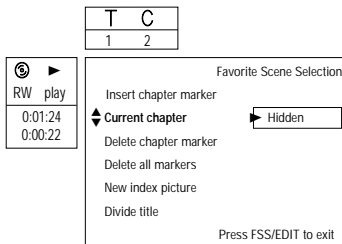
DVD+R

DVD+RW

Although all editing changes may not be accessible when you play the Disc on other DVD Players, these editing changes are available for the DVD Recorder.

1 On the Index Picture Screen, press ▲▼ to select the Title you want to edit, then press PLAY ► to begin playback.

2 During DVD+RW or DVD+R playback, press FSS. The Favorite Scene Selection menu will overlay the currently playing video image. The current Title and Chapter numbers will appear at the top of the screen.



3 Press ▲▼ to select Insert chapter marker, Current chapter, Delete chapter marker, Delete all markers, New index picture, or Divide title (DVD+RW only), then proceed as described in step 4.

4 ● If you select Insert chapter marker, press OK. "Inserting chapter marker" will appear briefly. This places a Chapter marker at the point you select. Then, you can move quickly to that point during playback by pressing NEXT ► or PREVIOUS ◀ to select the next Chapter.

● If you select Current chapter, press ► (or SELECT) repeatedly to select Visible or Hidden, then press OK. Initially all Chapters are visible during playback. By hiding chapters or making them visible, you determine which chapters you want to view. For example, if you do not want to watch certain scenes (for example, commercials), insert Chapter markers at the beginning and end of the scene, then hide that segment by choosing Hidden. Then, watch your recording without the hidden chapters. The picture may freeze briefly between scenes during playback, but you will not see the hidden content.

● If you select Delete chapter marker, press OK. This deletes the Chapter marker at the beginning of the current Chapter. (This option is not always available.)

● If you select Delete all markers, press OK. "This will delete all markers in this title. Press OK to confirm" will appear. Press OK again. (If you decide not to delete all markers, press ◀.) (This option is not always available.)

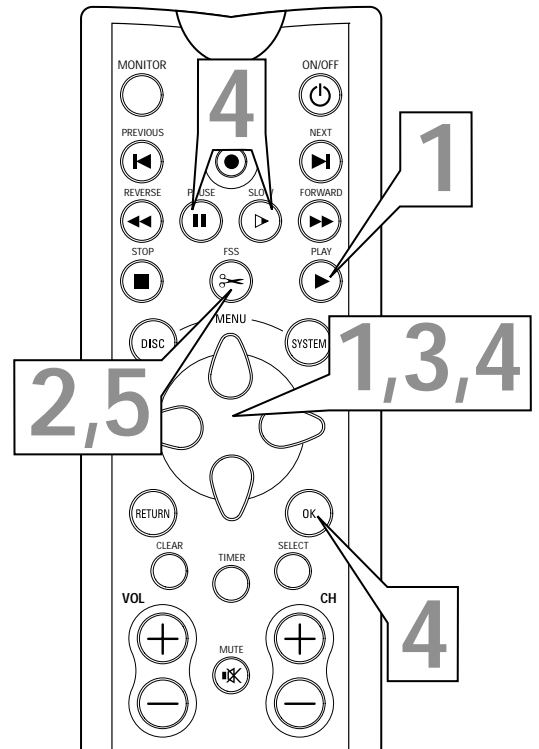
● If you select New Index Picture, press PAUSE || or SLOW ► to accurately choose a frame of picture during playback. This frame will become the miniature picture that will appear in the Index Picture Screen for the current Title.

When you reach the desired picture frame, press OK. "This will update the index picture Press OK to confirm" will appear.

Press OK again. (If you decide not to select a new Index Picture, press ◀.) "Updating menu" will appear, then the Index Picture Screen will reappear when the action is complete.

● If you select Divide title (DVD+RW only), press PAUSE || to accurately choose the point at which you want to start the new Title. Press OK. "This will divide this title into two separate titles. Press OK to confirm" will appear. Press OK again. (If you decide not to divide the Title, press ◀.) "Dividing title" appears until the action is complete; the Index Picture Screen will reappear.

5 Press FSS to remove the Favorite Scene Selection menu if necessary.



Helpful Hints

- The maximum number of Chapters per Title varies. When you reach the maximum number, "Too many chapters" will appear on the screen. Delete Chapters before making more.
- The Favorite Scene Selection menu may disappear after about five minutes if you do not edit any information.
- You cannot undo a Title division. A new index picture will appear where you divided the Title. The Index Picture Screen will show two Titles instead of one, but both will have the same name. You can change the name in Title Settings. Details are on page 44.
- Editing changes on DVD+Rs will be accessible only when playing the DVD+R on this DVD Recorder. You can not edit a DVD+R after it is finalized.
- You can insert chapter markers during recording by pressing the FSS button at the point you want to mark.

DVD

VIDEO CD

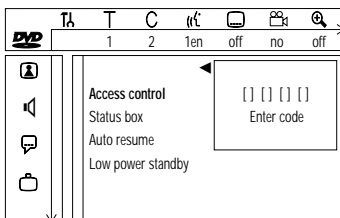
Access Control limits viewing of Discs that exceed the limits you set. This feature will not limit viewing if the Disc manufacturer did not code the Disc. Philips cannot guarantee the availability of Access Control with all Discs, and therefore denies any liability associated with unintended watching of Discs. Make sure your Discs play according to your Access Control settings before you allow children access to the DVD Recorder.

Change Code

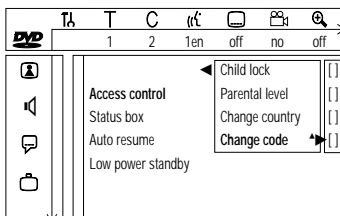
1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.

2 Press repeatedly to select , then press . Access control will be selected.

3 Press again, then press the **Number buttons** to enter your **old four-digit code**. When doing this the first time, enter any four numbers you prefer. You will have to enter the same code, exactly, twice. This will set your code for the first time.

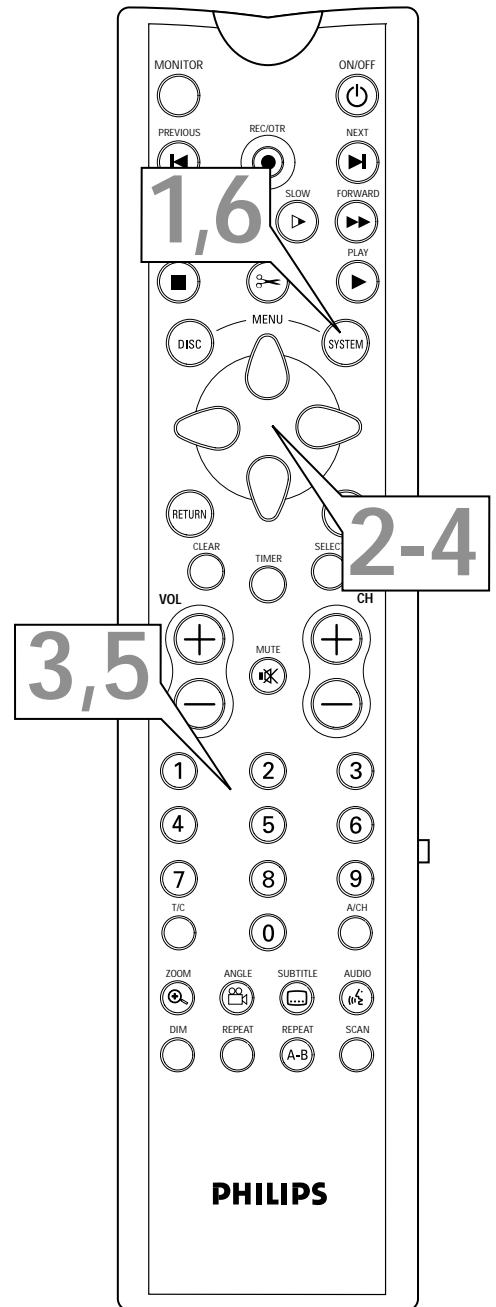


4 Press repeatedly to select **Change code**, then press .



5 Press four **Number buttons** to enter the new four-digit code. Then, enter it again - exactly - to confirm it.

6 Press **SYSTEM MENU** to remove the menu.



PHILIPS

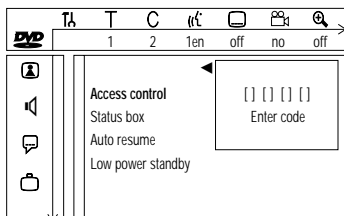
Helpful Hint

- The code may not go into effect until you activate Child Lock. (You may have to keep confirming the code.) See page 50 to activate Child Lock.

50 Access Control (cont'd)

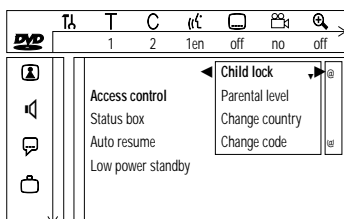
Child Lock

- 1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.
- 2 Press repeatedly to select , then press . Access control will be highlighted.
- 3 Press again, then press the Number buttons to enter your four-digit code. Details are on page 49.

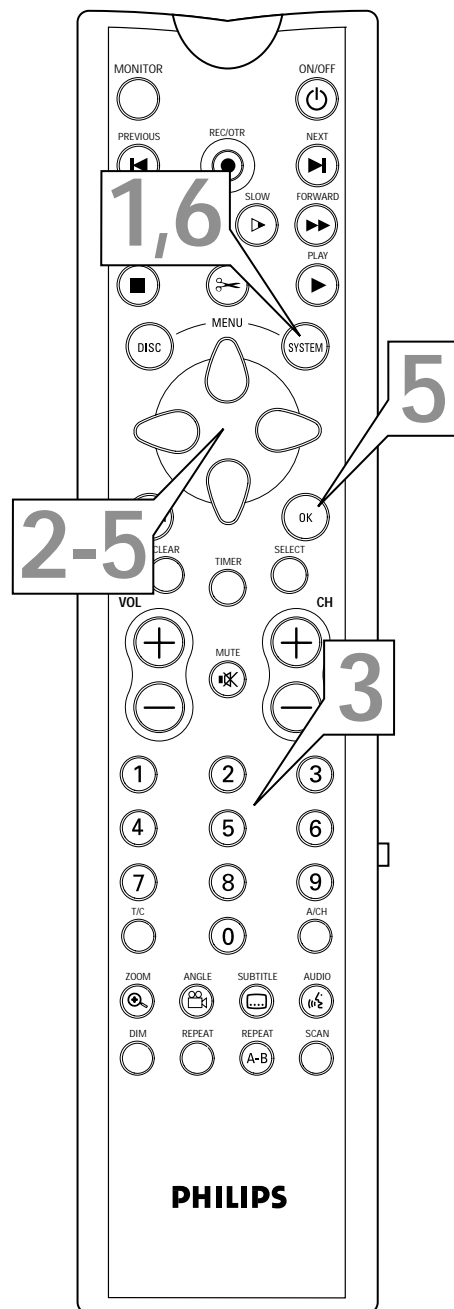


- 4 Child lock will be highlighted. Press .

- 5 Press to select **Locked** or **Unlocked** , then press **OK**. If you chose Locked, unauthorized or Locked Discs will not play unless you enter your four-digit code.



- 6 Press **SYSTEM MENU** to remove the menus.



Locking or Unlocking Specific Discs

Not all DVDs are rated or coded by Parental levels. You may choose to specifically lock or unlock a Disc by choosing Play once or Play always. This way, you can disable viewing regardless of the rating of the DVD. You will need to know your 4-digit code in order to view the Disc.

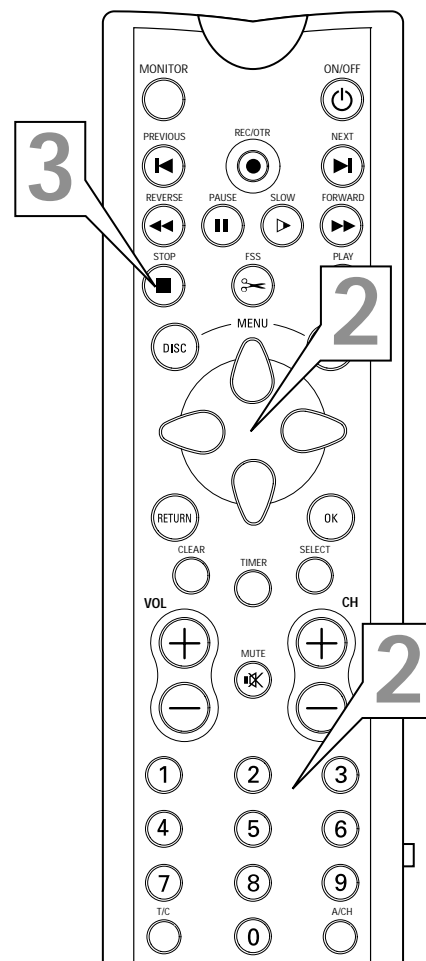
- 1 Insert a Disc.** The Access Control message will appear on the TV screen. (Child Lock should be Locked. *Details are on page 50.*)



- 2 Press ▲▼ to select Play once or Play always. Then, press the Number buttons to enter your four-digit code.**
If you select Play Once, the Disc will play one time. If you stop playback, open the Disc tray, or turn off the Recorder's power, the Access Control screen will reappear when you try to play the Disc again.
If you select Play Always, the Disc will play even if you turn off the DVD Recorder, open the disc tray, or set Child Lock to (Locked). *Details are on page 50.*

- 3 If you later decide to lock the Disc so that it will not play always:**
When you insert the Disc, playback begins automatically and safe appears on the TV screen. **Press STOP ■ while safe is on the TV screen.** Locked will appear. If the Disc continues playing, press STOP ■ again to stop playback. You may need to turn off the DVD Recorder or remove the Disc before the Disc is completely Locked. The next time you turn on the DVD Recorder or try to play the Disc, the Access Control screen will appear. The Disc will not play unless you enter the four-digit code.

- 1 Insert a Disc.**



Helpful Hints

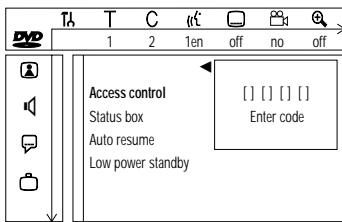
- The Access Control screen will appear when you try to play a Locked Disc. If you do not know your code, press STOP ■. Then, select Access Control as described in steps 1-3 on page 49. When you are asked to enter the code, press STOP ■ four times. Press SYSTEM MENU, then press PLAY ► to start playback. This restores all the Access Control settings to their original factory settings.
- Two-sided DVDs may have a different ID for each side. To unlock the entire Disc, unlock each side.
- Multi-volume Disc sets may have a different ID for each volume. Unlock each volume.

52 Access Control (cont'd)

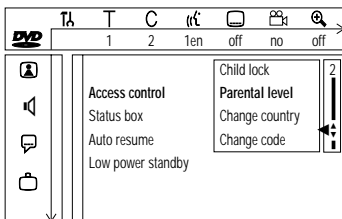
Parental Level

DVDs may contain alternative scenes that conform to the Parental Level, or movie rating, that you select. The Parental Level may apply to the complete Disc or to certain scenes on the Disc. These scenes are rated from 1 to 8. Follow the steps below to set the Parental Level at which you want Discs to play.

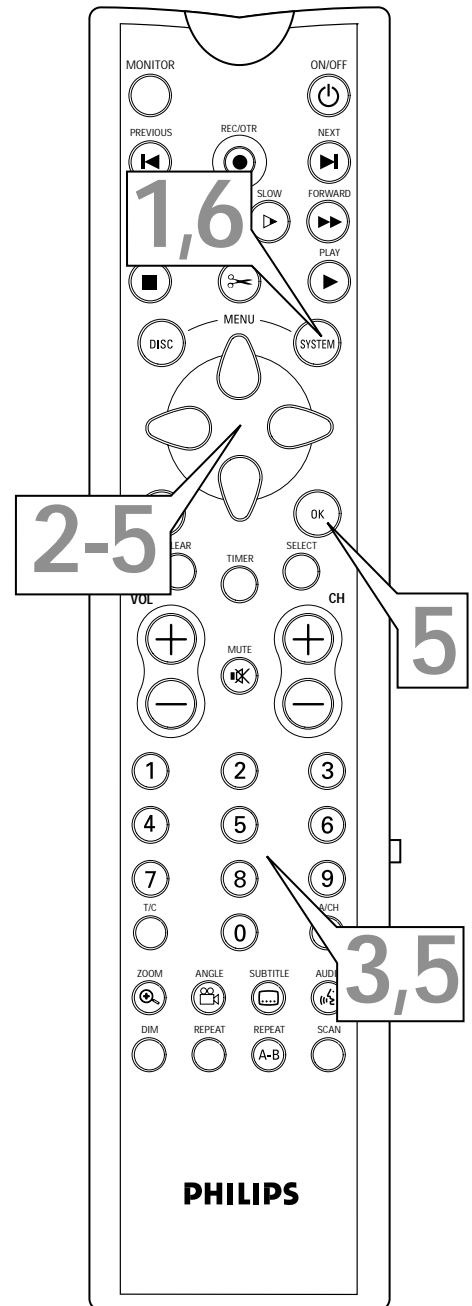
- 1 Press **SYSTEM MENU**. may be selected. If it is not, press **◀** to select it.
- 2 Press **▼** repeatedly to select , then press **▶**. Access control will be highlighted.
- 3 Press **▶** again, then press the Number buttons to enter your four-digit code.



- 4 Press **▼** to select Parental level, then press **▶**.
- 5 Press **▲▼** or the Number buttons to select a rating, then press **OK**.
Select "0" (–) to deactivate Parental level. The entire Disc will play.
Choose a rating between 1-8, and scenes with the same rating or lower will play. Higher rated scenes will not play unless an alternative scene is available on the Disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, play-back will stop. Enter the 4-digit code to play the Disc.



- 6 Press **SYSTEM MENU** to remove the menus.



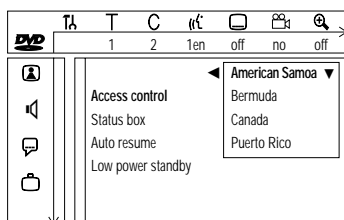
Helpful Hint

- The rating numbers compare to standard U.S. movie ratings as follows:
7 - NC-17
6 - R
4 - PG-13
3 - PG
1 - G

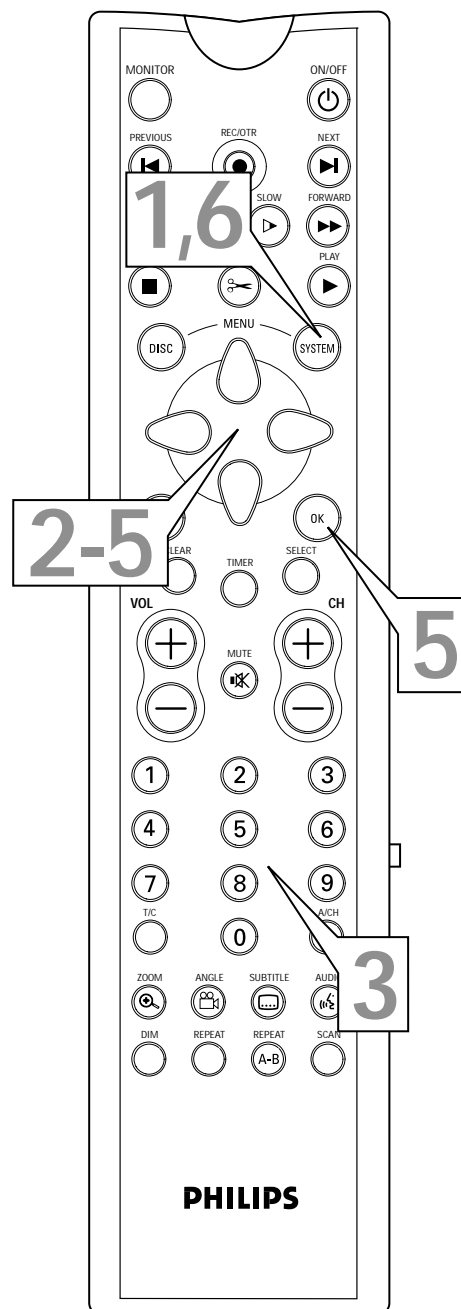
Change Country

If a Disc has Parental Level coding, the codings are applicable only for the country specified on the Disc. The Disc manufacturer sets these codings. For example, a Disc may be coded at Level 3 for the United States. So, for some Discs, you may need to choose the Country for which the Disc is coded in order for the Disc to play at the Parental Level you select. Details are on page 52. Also refer to your Disc case for more information.

- 1 Press **SYSTEM MENU**. may be selected. If it is not, press **◀** to select it.
- 2 Press **▼** repeatedly to select , then press **▶**. Access control will be highlighted.
- 3 Press **▶** again, then press the Number buttons to enter your four-digit code. Child lock will be highlighted.
- 4 Press **▼** repeatedly to select Change country, then press **▶**.



- 5 Press **▲▼** to select the country for which the Disc is coded, then press **OK**.
- 6 Press **SYSTEM MENU** to remove the menus.



54 User Preference Settings

1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.

2 Press repeatedly to select , then press .

3 Press to select **Status box**, **Auto resume**, **Low power standby**, **PBC (Video CD only)**, or **Finalize disc (DVD+R only)**. Then, press and follow step 4 according to your choice.

4 ● If you selected **Status box**, press to choose **On** or **Off**, then press **OK**. The status box displays the current Disc type and status of the Recorder. Select **On** if you want to see the Status boxes. Choose **Off** if you do not want to see the Status boxes.

Details are on page 26.

● If you selected **Auto resume**, press to choose **On** or **Off**, then press **OK**. Auto resume affects the last 20 pre-recorded DVDs and Video CDs you played. When Auto resume is **On**, play resumes at the point at which it stopped the last time you played the Disc. If Auto resume is **Off**, the Recorder starts playing the Disc from the beginning of the Disc.

● If you selected **Low power standby**, press to choose **On** or **Off**, then press **OK**. If Low power standby is **On** and you do not use the Recorder for 20 minutes, the image on the TV screen will dim.

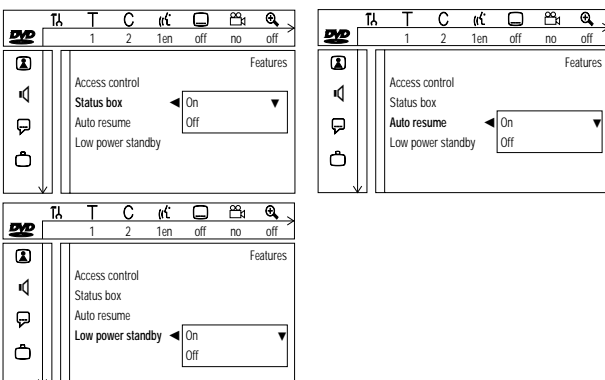
● If you selected **PBC (Playback Control) (Video CD only)**, press to choose **On** or **Off**, then press **OK**. PBC provides additional features on some Video CDs. Check the Disc case for details. The Video CD will show instructions or options on the TV screen. Use the Recorder's remote buttons as directed by the Video CD. PBC appears in the menu only if a PBC-compatible Video CD is in the Recorder.

● If you selected **Finalize disc (DVD+R only)**, press **OK**. "Finalizing" will appear during finalization. The process may take a few minutes. When finalization is complete, the Index picture screen will reappear. **You can not unfinalize a DVD+R, and you can not record or edit the DVD+R after you finalize it.**

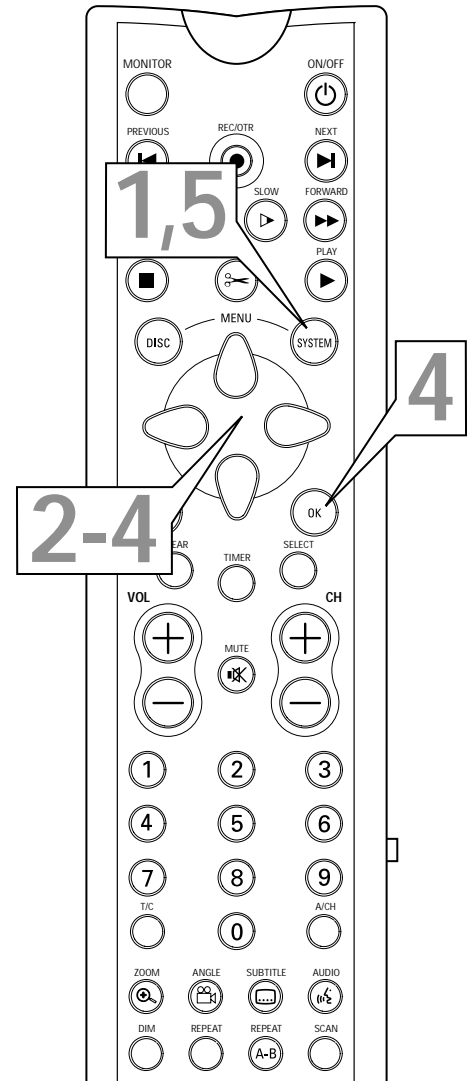
Finalize disc appears only when an unfinalized DVD+R is in the Recorder.

A DVD+R will play on other DVD Players only after the Disc is finalized.

● **Adapt Disc Format** will appear if a DVD+RW recorded on a different brand of Recorder is in the Philips Recorder. The option only appears when such a Disc is in the Philips Recorder. If the Disc is unprotected, you can adapt the disc format by selecting Adapt Disc Format and following the on-screen instructions. This will enable you to play the Disc and access its features, such as the menus or edited versions.



5 Press **SYSTEM MENU** repeatedly to remove the menus.



Helpful Hint

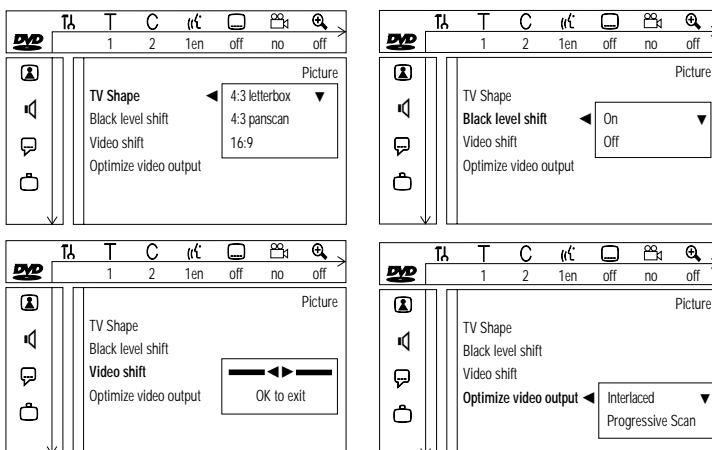
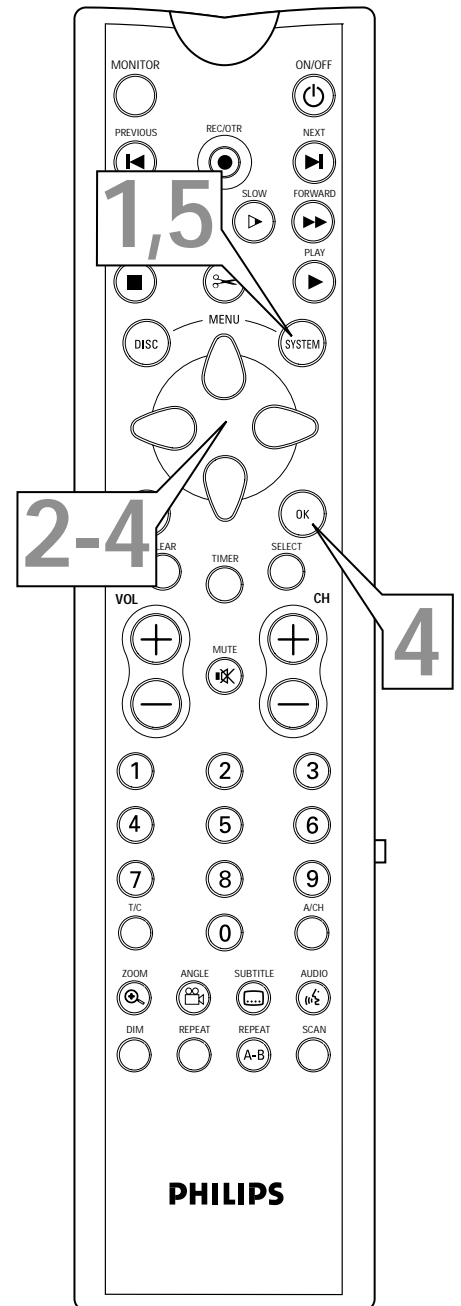
- If resume appears when you start playback, you can press **PLAY** while resume appears on the TV screen. This lets you resume play from the last played point, even if Auto resume is **Off**.

- 1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.
- 2 Press to select , then press .
- 3 Press to select **TV Shape**, **Black level shift**, **Video shift**, or **Optimize video output**. Then, press and follow step 4 according to your choice.
- 4
 - If you selected **TV Shape**, press to select **4:3 letterbox**, **4:3 panscan**, or **16:9**, then press **OK**.
Select 4:3 letterbox if you have a regular TV and want to see the picture with black bars at the top and bottom of the screen. This looks like the picture you see when watching movies in a theater. This setting is possible only if the DVD contains letterbox material.
Select 4:3 panscan if you have a regular TV and want both sides of the picture to be trimmed, or formatted to fit your TV screen. This setting is possible only if the DVD contains pan & scan material.
Select 16:9 if you connected the DVD Recorder to a widescreen TV.

● If you selected **Black level shift**, press to select **On** or **Off**, then press **OK**. Set Black level shift to On during playback of NTSC Discs. This will improve the color contrast during Disc playback. Black level shift has no effect on PAL Disc playback.

● If you selected **Video shift**, press to center the picture on your TV screen - or "shift" the video. When you are satisfied with the position of the picture, press **OK**.

● If you selected **Optimize video output**, press to select **Interlaced** or **Progressive Scan**, then press **OK**. Select Progressive Scan if you used the PROG SCAN OUT jacks on the DVD Recorder to connect the Recorder to the TV. *Details are on page 10.* Otherwise, choose Interlaced. Choosing Progressive Scan, when applicable, will sharpen the image of a paused or still picture or DVD menu.



- 5 Press **SYSTEM MENU** to remove the menus.

Helpful Hints

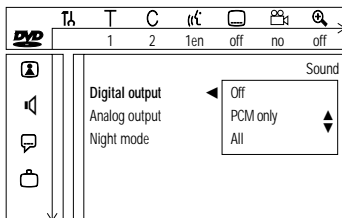
- The format you select must be available on the Disc. If it is not, the settings for TV Shape will not affect the picture during playback.
- Some widescreen TVs may show only part of the DVD Recorder's menu. Adjust the screen mode on your TV. See your TV owner's manual for details.

56 Digital Output

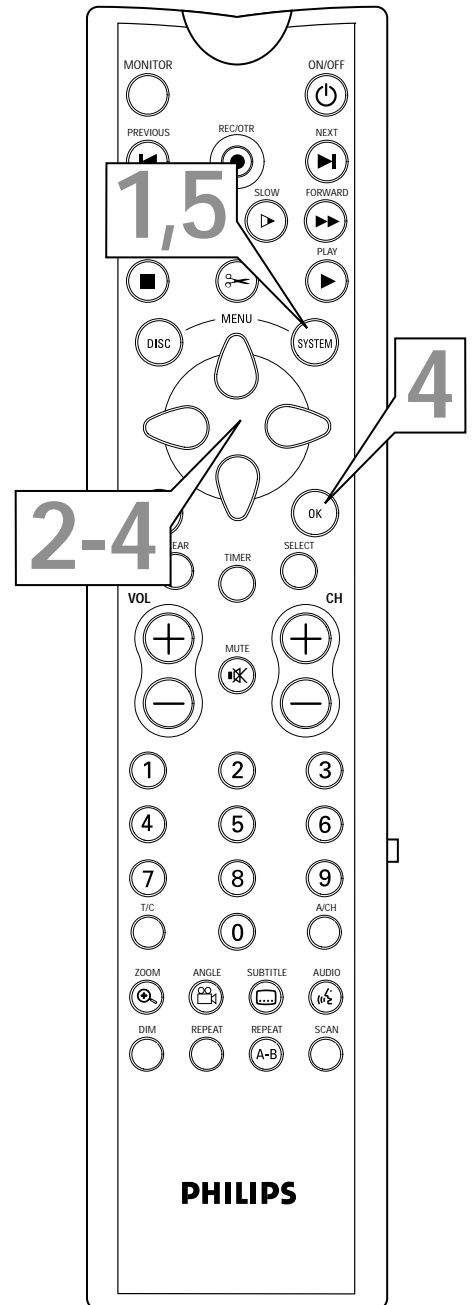
After connecting the DVD Recorder to your TV and other equipment, you may need to change the DVD Recorder's Digital Output setting. Look to see which DVD Recorder audio jacks you connected to your other equipment, then set your Digital Output accordingly. The information in step 4 will help you make your choice.

You only need to adjust the Digital Output if you used the DIGITAL AUDIO OUT (OPTICAL or COAX) jacks of the Recorder. (If you used the red and white AUDIO OUT jacks, see page 57 to adjust the sound.)

- 1** Press **SYSTEM MENU**. may be selected. If it is not, press to select it.
- 2** Press repeatedly to select , then press .
- 3** Digital output will be selected. Press . If Digital output is not selected, press to select it, then press .
- 4** Press to select **Off**, **PCM only**, or **All**, then press **OK**.
 - Select **All** if you used the COAX (coaxial) DIGITAL AUDIO OUT jack to connect the DVD Recorder to a Stereo Receiver that has a built-in multi-channel decoder. *Details are on page 14.*
 - Select **Off** if you did not use either the COAX (coaxial) or OPTICAL DIGITAL AUDIO OUT jack. For example, if you used the supplied audio cables to connect the red and white AUDIO OUT jacks of the DVD Recorder to a TV or Stereo, select **Off**. See page 57 to adjust your analog sound settings.
 - Select **PCM only** if you used the COAX (coaxial) or OPTICAL DIGITAL AUDIO OUT jack of the DVD Recorder for connections, but the audio equipment does not include a built-in digital multi-channel decoder.





- 5** Press **SYSTEM MENU** to remove the menus.

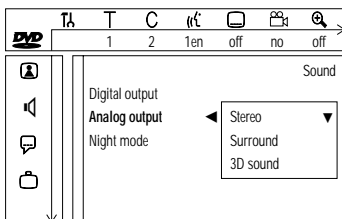


If you connected the DVD Recorder's red and white AUDIO OUT jacks to a Stereo (or Stereo TV) as shown on pages 10-13, choose a setting for Analog Output.

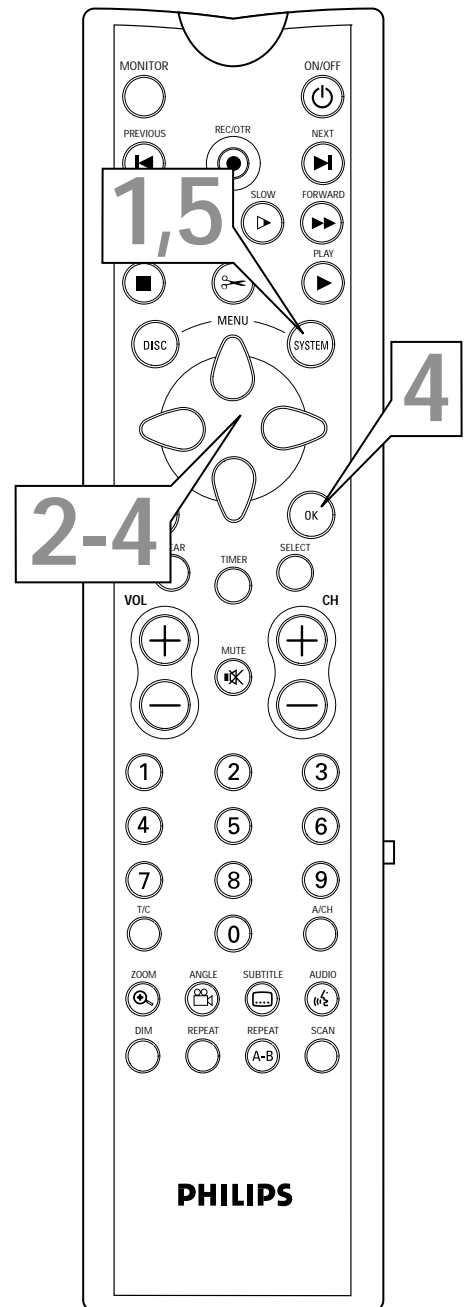
You do not need to adjust this setting if you used the DIGITAL AUDIO OUT (OPTICAL or COAX) jacks on the DVD Recorder.

Check your Stereo and see if it is compatible with Dolby Surround or TruSurround. Then follow the steps below to choose the Analog Output setting that is most compatible with your audio equipment (or TV).


- 1** Press **SYSTEM MENU**.  may be selected. If it is not, press **◀** to select it.
- 2** Press **▼** repeatedly to select , then press **▶**.
- 3** Press **▼** to select **Analog output**, then press **▶**. Analog output may be selected already. If so, just press **▶** to continue.
- 4** Press **▲** or **▼** to select **Stereo**, **Surround**, or **3D sound**, then press **OK**.
 - Select Stereo to hear stereo sound. This will work with any type of equipment that has right and left audio jacks (usually red and white).
 - Select Surround if your audio equipment is compatible with Dolby Surround. If it is, usually a Dolby Pro Logic logo will appear on the equipment.
 - Select 3D sound if you want to enjoy surround sound but your equipment is not Dolby Pro Logic compatible.



- 5** Press **SYSTEM MENU** to remove the menus.



TruSurround™
by **SRS** 

TruSurround and the  symbol are trademarks of SRS Labs, Inc.
TruSurround technology is incorporated under license from SRS Labs, Inc.

Helpful Hint

- You also can set analog sound in the Menu Bar. Details are on page 31.

58 Language Settings, Recording Audio

DVD

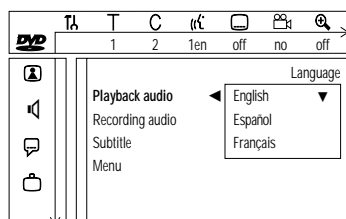
Language Settings

Select a different language for the Disc Menu, Audio soundtrack, or Subtitles if multiple languages are available on the DVD.

1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.

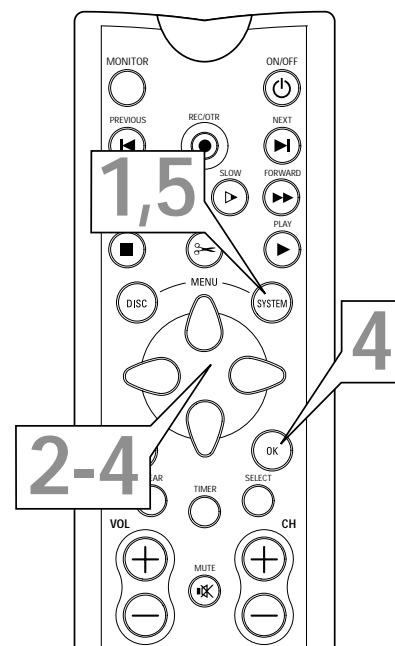
2 Press repeatedly to select , then press .

3 Press to select Playback audio, Subtitle, or Menu, then press .



4 Press to select the language you want, then press **OK**. The changes will be effective only if the language is available on the Disc. Some DVDs allow you to change languages in the DVD Disc Menu only.

5 Press **SYSTEM MENU** to remove the menus.



DVD+RW

DVD+R

Recording Audio

Some TV programs broadcast in stereo or in a second audio program (SAP). Usually, second audio means the program has a second language available. For example, the program might be available in English and Spanish, with Spanish being the SAP (second audio program) option.

To record the stereo or SAP broadcasts with the DVD Recorder, select Stereo or SAP as your preferred recording audio as described below.

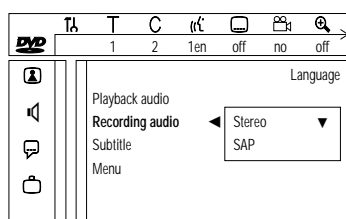
Your selection will only be active if the program is available in stereo or second audio. When you play the recording, you can play only in the audio you recorded. For example, if you recorded in SAP, you can play the recording only in SAP.

1 Press **SYSTEM MENU**. may be selected. If it is not, press to select it.

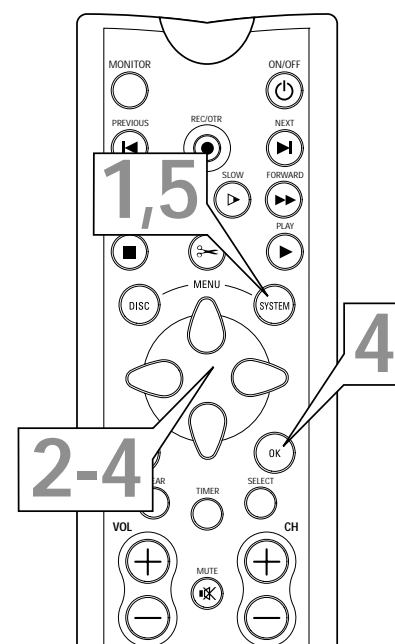
2 Press repeatedly to select , then press .

3 Press to select Recording Audio, then press .

4 Press to select Stereo or SAP, then press **OK**.



5 Press **SYSTEM MENU** to remove the menus.




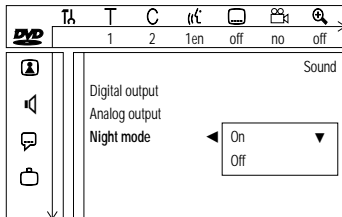
Helpful Hint

- If Recording audio is set to SAP and you record a TV program that is available only in Stereo, the Recorder will record the program in Stereo.

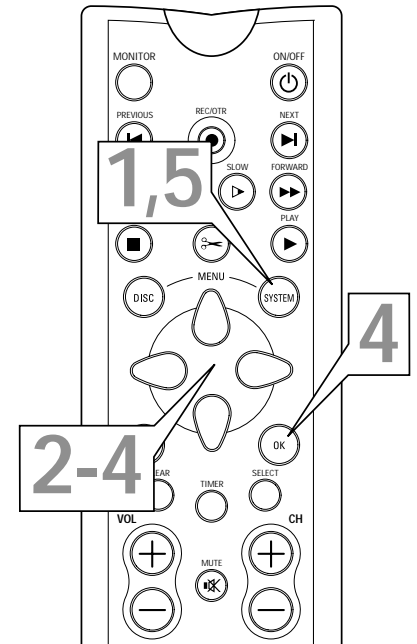
Night Mode

Turn on Night Mode to improve the sound during low volume playback.


- 1 Press **SYSTEM MENU**. may be selected. If it is not, press **◀** to select it.
- 2 Press **▼** repeatedly to select , then press **▶**.
- 3 Press **▼** repeatedly to select **Night mode**, then press **▶**.



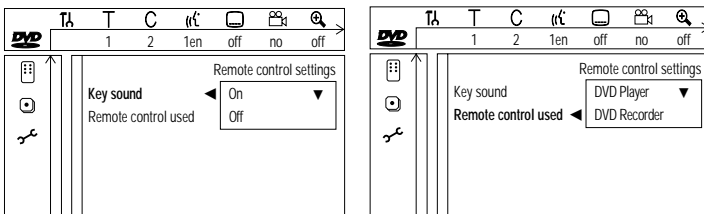
- 4 Press **▲** or **▼** to select **On** or **Off**, then press **OK**.
- 5 Press **SYSTEM MENU** to remove the menus.



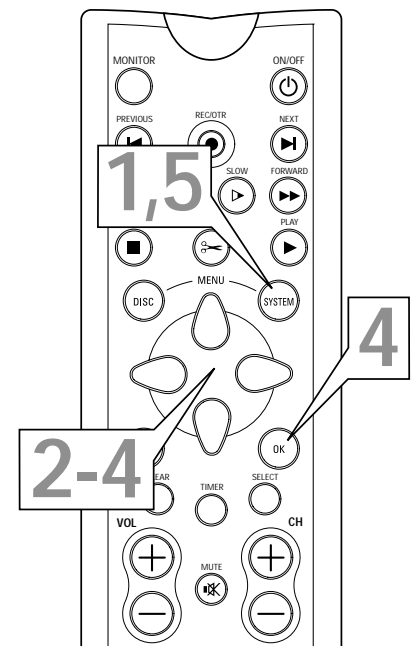
Remote Control Settings

- 1 Press **SYSTEM MENU**. may be selected. If it is not, press **◀** to select it.
- 2 Press **▼** repeatedly to select , then press **▶**.
- 3 Press **▲▼** to select **Key sound** or **Remote control used**. Then, press **▶** and follow step 4 according to your choice.
- 4
 - If you selected **Key sound**, press **▲▼** to select **On** or **Off**, then press **OK**.
Select **On** if you want the DVD Recorder to beep each time you press a key on the remote control or the Recorder. The factory setting is **On**. Select **Off** to disable the sound; the Recorder will be silent when you press buttons on the remote or the Recorder.

- If you selected **Remote control used**, press **▲▼** to select **DVD Player** or **DVD Recorder**, then press **OK**. The factory setting is **DVD Recorder**. By selecting **DVD Recorder**, you will operate the DVD Recorder with the remote control supplied with the DVD Recorder (as shown at right and throughout this book). However, if you have another Philips DVD Player and want to use that remote to also control the DVD Recorder, you may do so if you select **DVD Player**. You may not be able to access all the Recorder's features unless you use the Recorder's remote control.




- 5 Press **SYSTEM MENU** to remove the menus.




60 Using Your Recorder's Remote Control with Your TV

The following buttons on your DVD Recorder's remote control will operate the TV at any time:

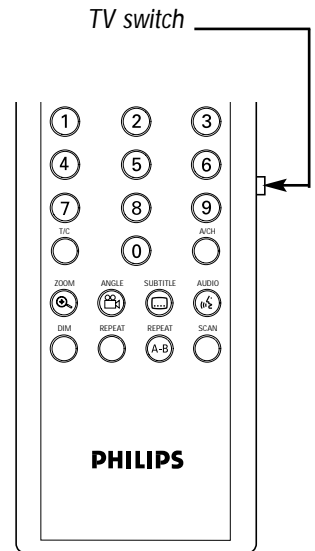
- **VOL +/-** increases/decreases TV volume
- **MUTE**  mutes/restores the TV sound

The following buttons operate the TV if you press and hold the TV switch on the right side of the remote while pressing these buttons:

- **CH +/-** Selects TV channels at the TV (not the Recorder).
- **A/CH** Selects the TV channel you were viewing just before switching to the current channel.
- **Number buttons 0-9** Press to choose a TV channel quickly.
- **ON/OFF**  Press to turn on or off the TV power.

If these buttons already operate your TV, no further action is necessary. If they do not, follow the steps for either Automatic Remote Setup or Manual Remote Setup to make the Recorder's remote control operate your TV.

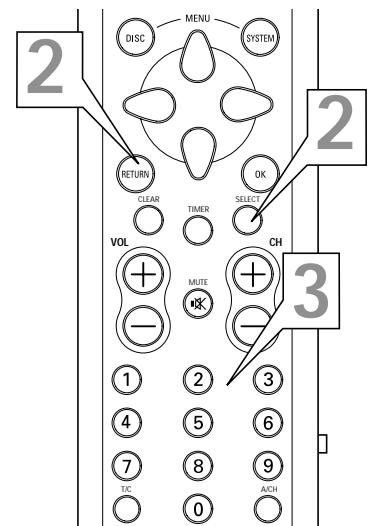
There is no guarantee the remote control will work all the features on your TV, and no guarantee the remote will operate all TV brands. This is not a defect of the remote.






Automatic Remote Setup

- 1 Turn on your television and find the code for your brand of TV in the list on page 61.
- 2 Point the remote control at the TV. Press and hold the **RETURN** and **SELECT** buttons simultaneously for at least three seconds, then release.
- 3 Within 30 seconds, press the **Number** buttons to enter the correct three-digit code for your brand of TV.
- 4 See if the remote control now works your TV as described above. If it does, you are finished. If it does not, repeat steps 1-3, using a different code for your brand, if available. If the remote still will not operate your TV after repeating steps 1-3 with all the codes for your brand, try the Manual Remote Setup procedure as described below.

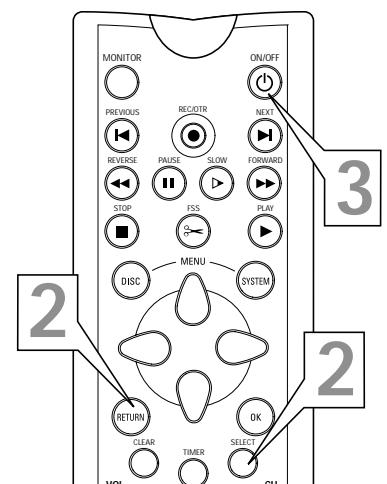
Automatic Remote Setup



Manual Remote Setup

- 1 Turn on your television.
- 2 Point the remote control at the TV. Press and hold the **RETURN** and **SELECT** buttons simultaneously for at least three seconds, then release.
- 3 Within 30 seconds, press and hold the **ON/OFF**  button until your TV turns off. Your TV will turn off when the remote control finds the correct code that will allow the remote to work your TV. When your TV turns off, immediately release the **ON/OFF**  button. This step may take up to two minutes. If the TV does not turn off after two minutes, release the **ON/OFF**  button. The code for your TV could not be found.
- 4 Make sure your remote works your TV as described above.

Manual Remote Setup




Using Your Recorder's Remote Control with Your TV (cont'd) 61

A		D		I		O	
AOC.....	046,057	Daewoo.....	119,046,401,	Inteq.....	044	Osume.....	099
Acura.....	036	478,036,064,066	Interfunk.....	064	Otto Versand.....	064,037,
Admiral.....	120,490	Dainichi.....	245	Intervision.....	064,129,	063,244,347,581
Adyson.....	244	Dansa.....	064	Isukai.....	244,291	P	
Aiko.....	119	Dayton.....	036	245	Palladium.....	397,445
Akai.....	057	Daytron.....	046	J		Panama.....	244,291
Akura.....	245,291	Decca.....	064,099	JBL.....	081	Panasonic.....	078,277,677
Alaron.....	206,243	Denon.....	172	JCB.....	027	Pathe Cinema.....	347,243
Alba 064,036,245,063,398		Dixi.....	036,064	JVC.....	080,063,398,680	Pausa.....	036
Allorgan.....	321	Dual Tec.....	244	K		Penney.....	074,087,057,048,
America Action.....	207	Dumont.....	044,046,097	KEC.....	207	205,078,066,046,083,183	
Amplivision.....	244	E		KTV.....	207,244,057,066	Perdio.....	347
Amstrad 198,398,036,064		Electroband.....	027	Kaisui.....	245,244,	Philco.....	172,046,
Anam.....	207,036	036,243,309	036,243,309	057,081,490
Anitech.....	036	Elin.....	064	Kamp.....	243	Philips.....	064,039,
Arcam.....	243,244	Elite.....	245,347	Kapsch.....	233	081,401,581
Asuka.....	245	Elta.....	036	Kawasho.....	243	Phonola.....	064,039
Atlantic.....	233	Emerson.....	263,207,205,	Kendo.....	064	Pilot.....	046,057,066
Audiosonic.....	064,136	206,490,309,066,046,181		Kenwood.....	057,046	Pioneer.....	136,193
Audiovox.....	119,207,478	Envision.....	057	Kingsley.....	243	Portland.....	046,066,119
Autovox.....	233	Erres.....	039,064	Korpel.....	064	Prism.....	078
B		Expert.....	233	Koyoda.....	036	Profex.....	036
BPL.....	309	F		L		Proline.....	348
BSR.....	321	Ferguson.....	136,064	LG.....	083	Proscan.....	074
BTC.....	245	Fidelity.....	243	LXI.....	181,074,081,183,205	Protech.....	064,129,036,
Bang & Olufsen.....	592	Finlux.....	064,132,097,	Leyco.....	099,064,291,321	458,244,291,445
Basic Line.....	036,245	099,206	Liesen & Tter.....	064	Proton.....	205
Baur.....	064,037,581	Firstline.....	348,036,243,	Luma.....	233	Pulsar.....	044,046
Baysonic.....	207	244,321	Luxman.....	083	Pye.....	039
Beaumark.....	205	Fisher.....	244,181,397	M		Q	
Beko.....	397	Flint.....	482	M Electronic.....	132,244,	Quasar.....	078,277,192,677
Belcor.....	046	Formenti.....	347,064	036,064,136,401	Quelle.....	064,097,037,581
Bell & Howell.....	181	Frontech.....	458,291	MGA.....	177,046,057,205	Questa.....	063
Beon.....	064	Fujitsu.....	206,099,233	MTC087,057,046,083,243		R	
Binatone.....	244	Funai.....	321,198,206,	Magnadyne.....	129	R-Line.....	064
Blaupunkt.....	581	207,291	Magnafon.....	129	RBM.....	097
Blue Sky.....	245	Futuretech.....	207	Magnavox.....	081,057,	RCA.....	074,046,
Blue Star.....	309	G		063,206	078,117,120
Boots.....	244	GE.....	048,074,078	Manesth.....	347,244,291	Radio Shack.....	192,207,057,
Bradford.....	207	205,478,120,309	Marantz.....	064,081,057	205,066,181,
Brandt.....	136	GEC.....	099,064,244	Mark.....	064	046,074,083
Britannia.....	243	GPM.....	245	Matsui.....	036,064,244,398,	Radiola.....	064,039
Brockwood.....	046	Geloso.....	036	062,063,099,321	Rank Arena.....	063
Broksonic.....	263,490	Genexxa.....	245	Matsushita.....	277,677	Realistic.....	192,207,181,
Bush.....	064,398,245,036,	Gibraltar.....	044,046,057	Mediator.....	039,064	057,066,205,046,083
.....	063,309,321,401	GoldStar.....	064,046,057	Megatron.....	172,205	Revov.....	064
C		205,244,083,136	Memorex.....	205,036,083,	Rex.....	233,291
CCE.....	064,244	Goodmans.....	064,099,206,	177,181,277,490	Rhapsody.....	243
CS Electronics.....	243	398,063,244,401	Midland.....	044,066,074,078	Roadstar.....	036,291,245,445
CXC.....	207	Gorenje.....	397	Minerva.....	097,581	Runco.....	044,057
Candle.....	057,083	Gradiente.....	083,080	Minutz.....	048	S	
Carnivale.....	057	Granada.....	064,099,244	Mitsubishi.....	063,135,177,	SBR.....	039,064
Carrefour.....	063	Grandin.....	309	205,046,120	SEG.....	244,063,291
Carver.....	081	Grundig.....	097,581,064	Mivar.....	243	SEI.....	129,037,321
Cascade.....	036	Grunpy.....	206,207	Motorola.....	120	SKY.....	064
Cathay.....	064	H		Multitech.....	036,129,207,	SSS.....	046,207
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R		C		H		I	
S		D		J		K	
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O		Z		W		X	
P		A		Y		Z	
Q		B		A		B	
R		C		C		D	
S		D		E		F	
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C		N		Y		Z	
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E		P		C		D	
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J		U		M		N	
K		V		O		P	
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M		X		S		T	
N		Y		U		V	
O		Z		W		X	
P		A		Y		Z	
Q		B		A		B	
R		C		C		D	
S		D		E		F	
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62 Helpful Hints

If you are having problems with your product, check this list of problems and possible solutions before requesting service. You may be able to solve the problem yourself.

No power

- Press STANDBY-ON  on the front of the DVD Recorder to turn on the DVD Recorder.
- Connect the supplied power cord securely to the MAINS (AC power) jack on the rear of the DVD Recorder. Connect the power cord firmly to an AC power outlet. Use only the supplied power cord.
- Make sure the AC outlet has power by trying another appliance in the same outlet.

No picture

- Make sure the TV power is on.
- Check the video cables. Make sure the cable(s) are fastened securely to the Recorder and the TV.
- Set your TV to the correct Video In channel. These channels are usually near channel 00. Or, you may have a button on the TV remote control that selects an Auxiliary or A/V IN channel. See your TV owner's manual for details. Or, go to your lowest TV channel and change channels down until you see the Recorder's background picture on the TV screen.
- You only need one video connection between the DVD Recorder and the TV. *Details are on page 9.*

The picture is distorted; the picture is black and white during playback.

- TVs have a color system standard, usually NTSC in the United States. If the Disc's color system is different than your TV's color system, the picture may be distorted or colorless.
- The Recorder can not record in color if the TV channel or source is not providing color. In some situations, programs that are broadcast in black and white can not be recorded.
- Check the Disc for fingerprints. Clean the Disc with a soft cloth, wiping from the center to the edge in a straight line.
- Sometimes a small amount of picture distortion may appear. This is not a malfunction.
- If you set Record mode to a low-quality speed (such as EP in order to fit more recording on a Disc), set Record mode to a high-quality speed (such as SP) after you finish recording. Leaving the Recorder set to a low-quality speed may affect the picture quality when playing DVDs later. *Details are on page 46.*

The sound is distorted during Disc playback through a Stereo.

- Do not connect any cables from the DVD Recorder to the Stereo's "PHONO IN" jack.
- Do not connect a digital jack on the Recorder (DIGITAL AUDIO OUT - OPTICAL or COAX) to an analog jack on the Stereo. (Analog audio jacks are usually labeled as such and are usually red and white.)

No sound

- Check the audio connections. *Details are on pages 9-15.* Remember, you only need one audio connection. See page 9 to see what connection best suits your situation.
- Make sure cables are connected firmly to all equipment.
- Select another channel, sound source, or Auxiliary station at your Stereo or TV. See your Stereo's manual or TV's manual for details. Or, just continue selecting the different sound sources or modes on the Stereo or TV until you hear sound from the Disc that is in the DVD Recorder.
Details are on pages 9-15.
- Check your Analog output settings or Digital output settings. Make sure you choose the right setting, based on what equipment you connected to the DVD Recorder. *Details are on pages 56-57.*
- Make sure your Analog output settings or Digital output settings match the capabilities of your Stereo Receiver or TV. *Details are on pages 56-57.*
- Change the Audio setting of the DVD in the DVD Disc Menu.

A Disc recorded on this DVD Recorder will not play on a DVD Player.

- Make sure the recording is at least five minutes long if recorded in HQ; 10 minutes long if recorded in SP; 15 minutes long if recorded in LP; or 20 minutes long if recorded in EP. *Details are on page 46.*
- In some cases, you can adapt the Disc at the DVD Recorder, then try it again in the Player. This procedure does not solve the playability problem with all brands of Players. Furthermore, it may make the Disc incompatible with Players with which the Disc was compatible before you modified the Disc.
To modify a Disc, place the Disc in the DVD Recorder's disc tray. Do not close the tray. Then, press and hold the Number 2 button on the remote control until the tray closes. The Disc is now modified. Try it on the other Player.
If the Disc still will not play on the Player, repeat this procedure, but press and hold the Number 3 button instead until the Recorder's tray closes.
To return the Disc to its original version, repeat this process using the Number 1 button.
- To play a DVD+R on another DVD Player, finalize the Disc first. Follow the steps on page 47, choosing "Finalize Disc" at step 4.
- Editing changes may not be accessible when you play the Disc on other DVD Players. *Details are on page 48.*

An Audio CD will not play on the DVD Recorder.

- Some Audio CDs available on the market are copy protected. This DVD Recorder may not play such copy-protected discs.

The DVD Recorder will not select some features, such as Angles, Subtitles, or multi-language Audio.

- The feature may not be available on the Disc. If it is not, an "X" will appear on the TV screen. Check the Disc case to see if the Disc has the feature. If the Disc does not have the feature, the DVD Recorder cannot create the feature. This is not a malfunction of the DVD Recorder.

Disc will not play.

- Make sure the Disc label is facing up. If you are playing a two-sided Disc, make sure the label of the side you want to play is facing up. *Details are on page 18.*
- Check the Access Control settings for the Disc. *Details are on pages 49-53.*
- Check the Region Code of the DVD. The DVD must be coded for All regions or Region 1 in order to play on this DVD Recorder. *Details are on page 7.*
- See if the Disc is defective by trying another Disc. Make sure the Disc is not scratched or warped. Carefully clean the Disc. *Details are on page 6.*
- A DVD+RW recorded on a different brand of Recorder can play on the Philips DVD Recorder, but all its features may not be accessible. However, you may be able to adapt the disc format so you can access the Disc's original features. *Details are on page 54.* If the Disc is protected, you can not adapt the disc format.

The DVD Recorder does not respond to the remote control.

- Aim the remote control directly at the IR sensor on the front of the DVD Recorder. *Details are on page 22.* Point the remote control toward the DVD Recorder, not your TV.
- Remove any obstacles between the DVD Recorder and the remote control.
- Inspect or replace the batteries in the remote control. *Details are on page 8.*
- The remote control may have been set to operate another DVD Recorder accidentally. Press and hold the SELECT and Number 1 buttons on the remote control at the same time to have the remote control operate the DVD Recorder.
- Make sure you selected DVD Recorder as the Remote control used. *Details are on page 59.*

Recordings are not occurring as scheduled. New recordings cannot be made.

- See if the Disc has the maximum number of titles. Delete some recordings (DVD+RW only). *Details are on page 44.*
- You can record only if the Disc is Unprotected. You cannot use a write-protected Disc. *Details are on page 47.*
- You cannot duplicate copyrighted DVDs, videotapes, or TV broadcasts using the Recorder. "COPY PROTECT" may appear on the display panel if you try to dub or record copyrighted material onto a DVD+R or DVD+RW using the Recorder.
- The signal from your Antenna/Cable TV system must be strong enough to provide good channel reception. If the signal is weak, if there is no signal, or if a channel has gone off the air, a recording will not occur.
- Check the Disc. If the Disc is bad (scratched, warped, etc.) or if the Recorder cannot read the Disc, you cannot record. "NO DISC" may appear on the display.
- A timer recording may not occur if the power fails during the time the recording was supposed to occur.
- If you adjust the clock after you set a timer recording, reset the timer recording.



The Index Picture Screen does not appear, but the Disc still plays.

- Clean the Disc. *Details are on page 6.*
- Adapt the disc format if possible. *Details are on page 54.*


Another DVD player shows the Index Picture Screen but does not react to PLAY ►.

- Press STOP ■ to exit the Index Picture Screen, then press PLAY ►.

You need to access system information for service reasons.

- Press SYSTEM MENU.  may be selected. If it is not, press ◀ to select it. Press ▼ repeatedly to select , then press ►. Press ▼ repeatedly until the system information appears.

The DVD Recorder does not work.

- The DVD Recorder will not operate until you complete the Initial Setup. *Details are on pages 16-17.*
- In all other cases, disconnect the power cord from the Recorder and the power outlet for a few minutes. Reconnect the power cord and try to operate the Recorder again as usual.
If the DVD Recorder still will not operate, disconnect the power cord from the Recorder again. Then, while pressing and holding the STANDBY-ON  button on the front of the Recorder, reconnect the power cord. This resets the DVD Recorder to the factory mode, or to its original settings as they were when you first received the Recorder. You will have to complete the Initial Setup again and reset any items you have adjusted during your use of the Recorder.

Messages or strange codes appear on the Recorder's display.

- Remove and reinsert the Disc.
- Clean the Disc.
- Disconnect the power cord from the power outlet, then reconnect the cord and try playback as usual.
- During Initial Setup, "TURN ON TV" will appear on the Recorder's display panel. This appears in addition to the Initial Setup information that shows on your TV screen. (Initial Setup information is on page 16.) "TURN ON TV" indicates you should turn on your television and set it to the correct Video In channel. Even though your TV may be on, you must set it to the correct Video In channel to see the Initial Setup messages. See pages 9-14 to determine the correct Video In channel for your connection. Or, see your TV manual for details.
- There are error messages that apply to recording problems. *Details are on page 43.*

All of the DVD Recorder's system menu is not visible.

- Certain televisions may not show the entire system menu on the TV screen. If the upper or top portion of the Recorder's system menu does not appear properly, this is a TV-related issue and is not an improper functioning of the Recorder.

64 Glossary

AC-3: Audio Coding 3, also known as Dolby Digital; a multi-channel digital audio compression system from Dolby Labs.

Analog: Sound that has not been turned into numbers. Analog sound varies, while digital sound has specific numerical values. Analog sound is available when you use the red and white audio jacks on your equipment. These jacks send audio through two channels, the left and right.

AUDIO OUT Jacks: Jacks on the rear of the DVD Recorder that send audio to another system (TV, Stereo Receiver, etc.).

A/V: Audio/Video.

CD: Compact Disc.

COAX (coaxial) jack: Sends digital audio to a Stereo Receiver, allowing you to adjust the volume at the Receiver. The Receiver must have a coaxial in jack. This connection provides the 5.1 channel surround sound as heard in movie theaters.

Color system: There are various systems for transmitting television signals, for example PAL, SECAM, and NTSC. NTSC is the most common color system in the United States of America. The TV system is country dependent. The Recorder automatically selects the right TV system.

COMPONENT VIDEO Jacks: The OUT jacks on the rear of the DVD Recorder send high-quality video to a TV that has Component Video In jacks. The IN jacks allow the Recorder to receive high-quality video from other equipment, such as a DVD Player.

Digital: Sound that has been converted into numerical values. Digital sound is available when you use the COAX (coaxial) or OPTICAL DIGITAL AUDIO OUT jacks on the Recorder. These jacks send audio through multiple channels, instead of just two channels as analog does.

Dolby Digital: A surround sound system that provides 5.1 channel sound as used in movie theaters.

DTS: Digital Theater Systems. This is a surround sound system, but it is different from Dolby Digital. The formats were developed by different companies.

DVD: Digital Video Disc.

DVD+R: DVD+Recordable. These Discs can be recorded and finalized only once.

DVD+RW: DVD+ReWritable. These Discs can be recorded on repeatedly.

i.LINK: Also known as 'FireWire' and 'IEEE 1394.' A cable for transfer of high bandwidth digital signals as used by Digital Video camcorders or some Personal Computers.

Index Picture Screen: A screen that gives an overview of a DVD+RW or DVD+R. An Index Picture represents each recording.

Letterbox: Widescreen format; a TV aspect ratio setting (4:3). Displays the video in full-width, with black bars at the top and bottom of the TV screen. This format is similar to seeing a movie in a theater. If the Disc does not include a letterbox format, selecting 4:3 letterbox may have no effect. (For example, some DVDs are two-sided, with one side playing in widescreen format and the other side playing in a normal format.)

MPEG: Motion Picture Experts Group. A collection of compression systems for digital audio and video.

OPTICAL Jack: Converts electrical signals into optical signals before sending the audio to the Stereo Receiver. Optical audio is not prone to external electrical influences and has less noise, which reduces adverse effects on external equipment. Be sure to keep the protective cap on the jack when the jack is not in use. This keeps dust out of the jack.

OTR: One-Touch Recording. Start a timed recording by pushing just one button; select the switch-off time in intervals of 30 minutes.

Pan & Scan: A TV aspect ratio setting (4:3). Displays the video with full-height picture, with one or both sides of the picture trimmed to fit on your TV screen. Some movie companies refer to this as "reformatting the picture to fit your TV screen."

PBC: Playback Control. A special feature on a Video CD or Super VCD that enables interactive use.

PBS: Public Broadcast System. The PBS channel transmits data for Automatic clock setting.

PCM: Pulse Code Modulation. A digital audio encoding system.

RGB: Red-Green-Blue. A top-quality video connection where red, green and blue components of a video signal are carried through separate wires. This also is referred to as the component video connection.

S-Video: Produces a clearer picture by sending separate signals for the luminance and the color. If you connect the supplied S-Video cable, you will not need to use the supplied yellow video cable. You can use S-Video only if your TV has an S-Video In jack.

TruSurround: A system that simulates multi-channel sound via a two-channel connection (audio left and right). This allows you to enjoy multi-channel sound if your Stereo does not have a multi-channel decoder.

VCD: Video Compact Disc

VCR Plus+ System: Allows you to set a timer recording by entering a PlusCode number found in participating TV listings.

VIDEO OUT Jack: Jack on the rear of the DVD Recorder that sends video (picture) to a TV.

Widescreen: A TV aspect ratio setting (16:9). Displays the video appropriately when you connect the DVD Recorder to a widescreen TV.

If you are still having trouble with the Recorder after checking Helpful Hints and other information in this manual, you may perform a Diagnostic Test on the Recorder. Follow the steps below.

- 1** Disconnect the power cord from the Recorder's MAINS (AC Power) jack on the rear of the Recorder.
- 2** Press and hold the **PLAY ►** button on the front of the Recorder while you reconnect the power cord to the Recorder. "BUSY" will appear on the display panel, along with a counter number. Release **PLAY ►**. The counter will reach zero (0) when the test is finished.
- 3** Momentarily, "FAIL" or "PASS" will appear on the display panel.
If "FAIL" appears, your Recorder needs repair. Contact the Philips Customer Care Center for the Authorized Service Center nearest you.
If "PASS" appears, the Recorder apparently has no failure. The problem may be incorrect interpretation of the operating instructions, a wrong Disc in use, or incorrect connections. Contact the Philips Customer Care Center for further assistance in solving the problem.
- 4** If there is no failure, disconnect the power cord again, then reconnect it to the Recorder and an AC power outlet. The DVD Recorder will be ready for regular use.

66 Specifications

DISC FORMATS SUPPORTED

Disc type	Playback	Recording
DVD+RW	•	•
DVD+R	•	•
DVD-RW (Video format)	•	—
DVD-R	•	—
DVD-Video	•	—
SVCD	•	—
Video CD	•	—
Audio CD	•	—
CD-R	•	—
CD-RW	•	—

DVD+REWRITABLE DISC FORMAT

Medium	Phase-Change ReWritable	
Diameter	12 cm	
Capacity (single side)	4.7 Gbyte	
Recording time	HQ	60 minutes
	SP	120 minutes
	LP	180 minutes
	EP	240 minutes

TV STANDARD

	PAL/SECAM	NTSC
Scan Frequency	50Hz	60Hz
Number of lines	625	525
Playback	•	•
Recording	•	•
Internal tuner	—	•

VIDEO FORMAT

Digital Compression	MPEG2 for DVD MPEG1 for VCD
---------------------	--------------------------------

VIDEO RESOLUTION

	50Hz	60Hz
DVD-Video/ DVD+RW(HQ/SP)		
• Horiz.Resolution	720 pixels ¹	720 pixels ¹
• Vertical Resolution	576 lines	480 lines
DVD+RW (LP/EP)		
• Horiz.Resolution	360 pixels ²	360 pixels ²
• Vertical Resolution	576 lines	480 lines
VCD		
• Horiz.Resolution	352 pixels	352 pixels
• Vertical Resolution	288 lines	240 lines

¹ equivalent to 500 lines on your TV

² equivalent to 250 lines on your TV

VIDEO PERFORMANCE

DA Converter	10-bit
AD Converter	9-bit
Signal handling	Components
Video Output	1 Vpp into 75 Ohm
S-video Output	Y: 1 Vpp into 75 Ohm C: 0.300 Vpp into 75 Ohm
Component/ Progressive out	Y: 1 Vpp into 75 Ohm P _B : 0.7 Vpp into 75 Ohm P _R : 0.7 Vpp into 75 Ohm

CABINET

Dimensions (w x h x d):	17 x 4.3 x 13 inches
Net weight:	5.5 kg

AUDIO FORMAT

	Playback	Recording
Compressed digital	Multi-channel	2-channel
• Dolby Digital (AC-3)		16 bit, fs 48 kHz
• DTS	Multi-channel	—
• MPEG1	2-channel	—
• MPEG2	Multi-channel	—
Uncompressed digital (SP dif)		
• PCM	2-channel	—
	16, 20, 24 bit	
	fs 48, 96 kHz	

AUDIO PERFORMANCE

DA Converter	24 bit		
AD Converter	16 bit		
DVD	fs 96 kHz	4 Hz -44 kHz	
	fs 48 kHz	4 Hz -22 kHz	
Video CD	fs 44.1 kHz	4 Hz -20 kHz	
Audio CD	fs 44.1 kHz	4 Hz -20 kHz	
Signal-Noise (1kHz)	105 dB		
Dynamic Range (1kHz)	100 dB		
Crosstalk (1kHz)	110 dB		
Distortion/Noise (1kHz)	90 dB		

FRONT CONNECTIONS

DV i-LINK In	IEEE 1394 4-pin
S-VIDEO IN	Hosiden 4-pin*
VIDEO IN	Cinch (yellow)*
AUDIO Left/Right IN	Cinch (white/red)*

REAR CONNECTIONS

Component Video In	Cinch (green/blue/red)*
Component Video Out	Cinch (green/blue/red)*
Progressive Scan Out	Cinch (green/blue/red)*
S-video In	Hosiden 4-pin
S-video Out	Hosiden 4-pin
Video In	Cinch (yellow)*
Video Out (2x)	Cinch (yellow)*
Audio L/R In (2x)	Cinch (white/red)*
Audio L/R Out (2x)	Cinch (white/red)*
Digital Audio Out	1 coaxial*, 1 optical
	IEC958 for CDDA /LPCM
	IEC1937 for MPEG2,
	Dolby Digital
RF Antenna In	Coaxial 75 ohms
RF TV Out	Coaxial 75 ohms
Power	Standard (IEC type)

* gold-plated

POWER SUPPLY

AC power	polarized (IEC)
Power supply	100 -120V AC
	50/60 Hz
Power consumption	Operation 36 W
	Low-power standby 3 W

**RENEWED
90 DAY
LIMITED WARRANTY**

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